AUGUST 18, 1952 NEWS ISSUE

Electrical World

Price 35 Cents A McGRAW-HILL PUBLICATION

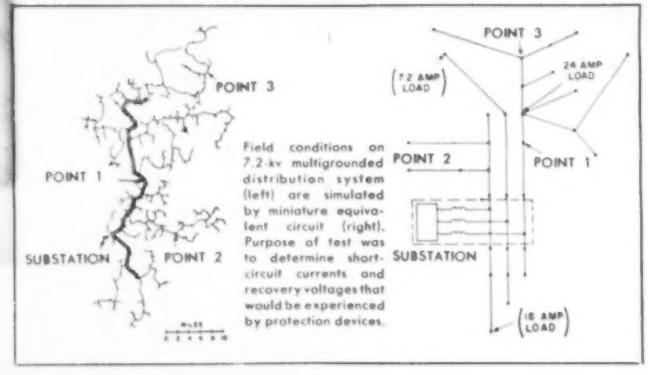
John Dierdorff of Pacific P&L is the new top officer of Nelpa . . . Page 29

The Big Haul—From GE to Con Ed . . . Page 22

Another Good Construction Year Ahead . . . Page 50

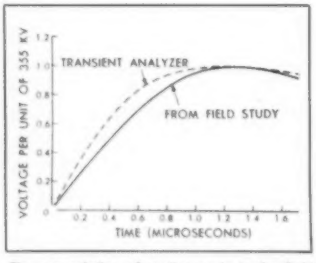
Transient analyzer study of lightning surges on 100,000-kw turbine-generator and unit-connected transformer is carried out by A. J. Schultz and I. B. Johnson of G-E Analytical Div. Lightning surge generator is on left. Rear panels represent 400 miles of transmission line.

Circuit studies in miniature point way to better system protection and performance



Field conditions on 7.2-kv multigrounded distribution system (left) are simulated by miniature equivalent circuit (right). Purpose of test was to determine short-circuit currents and recovery voltages that would be experienced by protection devices.

"Breadboard" model of 100,000-kva transformer permits study of surge voltage transferred from system primary to secondary. Such tests help establish proper levels of protection.



Close correlation of studies made in the field and on the transient analyzer are indicated in the voltage curves above of lightning surges across an arrestor.

With the growing size and complexity of most systems and the acute shortage of technical manpower available for field studies, increasing emphasis is now being placed on the need for rapid, simplified investigation of abnormal system disturbances arising from transient voltage and current phenomena.

Many electric utilities are finding the answers to their problems and to more economical, dependable system operation in the facilities offered by the G-E Transient Analyzer.

Through its ability to simulate a wide variety of system conditions by means of miniature equivalent circuits and models, the analyzer can often provide information difficult or impossible to obtain by other methods. Typical of its many applications are studies of the nature and magnitude of transient voltages caused by switching, and the analysis of lightning surge effects in complex system arrangements. In many cases, transient analyzer investigations help develop and accurately evaluate improved methods of system protection.

Increased knowledge arising from these studies is often reflected in benefits to the entire industry. General Electric Company, Schenectady 5, New York. XII-198

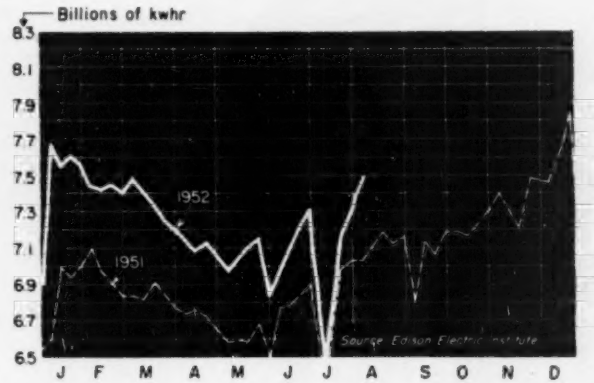
MORE POWER TO AMERICA

GENERAL ELECTRIC

VOLUME 138, NO. 7

August 18, 1952

Electrical World



Output Week Ended Aug. 9—7,495,322,000 Kwhr

Per Cent Change From Previous Year

	Total US	New Eng.	Mid. Atlan.	Cent. Ind.	West Cent.	South-east	South Cent.	Rocky Mount.	Pacific NW	Pacific SW
Aug. 9	+6.0	+6.1	+3.1	+1.3	+7.4	+13.3	+8.7	+12.4	+1.1	+7.9
Aug. 2	+5.7	+5.4	+2.5	−1.7	+6.1	+15.2	+16.3	+7.9	+2.4	+6.0
July 26	+4.6	+6.0	+3.6	−4.2	+4.1	+15.4	+10.9	+9.8	+3.1	+2.9

Electric Power Statistics

		Latest Month	Preceding Month	Year Ago
Peak Load (Million Kw)	Apr.	64.8	66.5	60.4
Capacity (Million Kw)	June	77.46	77.01	72.30
Production (Billion Kwhr)	June	31.53	31.82	29.84
Hydro		9.16	9.69	8.02
Fuel		22.37	22.13	21.82
Fuel Consumption				
Coal (Million Tons)	June	7.66	8.01	8.06
Oil (Million Barrels)		3.91	3.72	4.54
Gas (Billion Cu Ft)		89.29	76.99	75.42
Sales (Billion Kwhr)	May	27.94	28.33	26.35
Residential		7.52	7.91	6.68
Commercial		4.74	4.74	4.34
Industrial		13.83	13.85	13.42
Other		1.86	1.83	1.90
Net Income Class A & B Companies ($ Million)	June	69.83	68.24	62.63
Estimated Dec. 52 Peak (Million Kw)	May	80.0	80.2	78.8
Kwhr per Residential Customer (12 Month Average)	May	2,078	2,066	1,909
Revenue per Kwhr Residential Service (12 Month Average)	May	2.78¢	2.79¢	2.85¢
Canadian Production (Billion Kwhr)	May	5.33	5.03	5.13

Business Statistics

FRB Industrial Production Index†††	June	204	212	223
Gross National Product Annual Rate ($ Billion)	1stQtr.	339.7	334.6	319.5
E. W. S Industry Production Index	June	96.9*	116.0	123.2
ENR Construction Cost Index††	Aug.	122.7	119.6	113.8
BLS Consumer's Price Index	June	189.6	189.0	185.2
NEMA Insulation Materials, Sales Index†	May	517	545	614
NEMA Electric Appliance Sales Index†	May	219	221	296
NEMA Household Refrig. Sales Index†	May	132	133	183

* Estimated. † 1936=100 †† 1949=100 ††† 1937-39=100 (Unadjusted)

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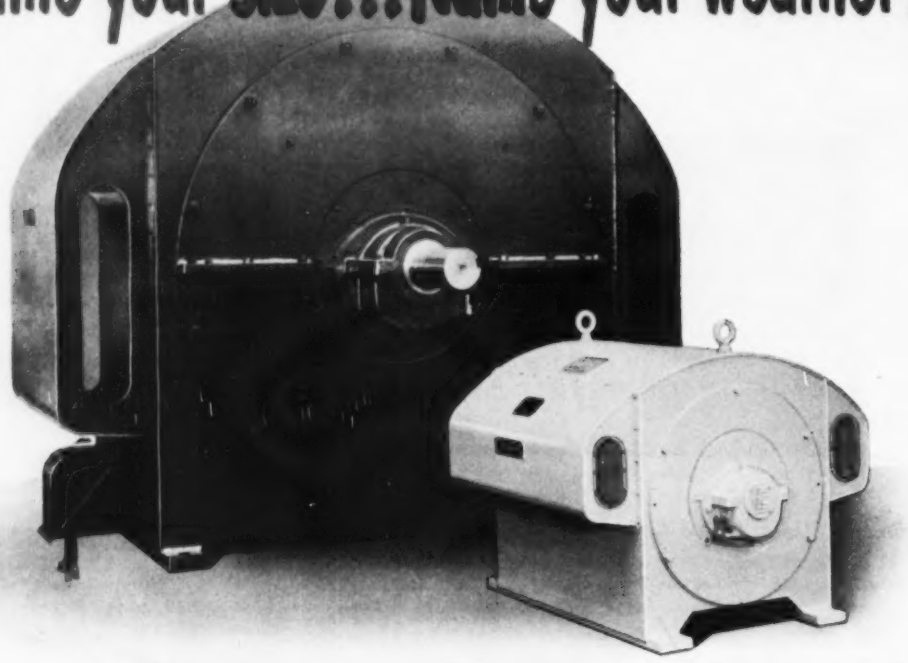

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R2-17 **RIDGWAY DIVISION**

ELLIOTT ELECTRICAL EQUIPMENT INCLUDES CROCKER-WHEELER INDUSTRIAL MOTORS

THE ELECTRICAL WEEK

Featured in This Issue

Defense Production Administration stretches its power planning to 1956 and a total 42 million kw in added capacity (p 7) . . . At SEC the new watchword is "Integrate and Combine" (p 8) . . . Output of 402 billion kwhr predicted by industry leaders in Hatfield Power Pool (p 10) . . . Agriculture's Louis Bean uses cyclic method of forecasting to predict water levels on power streams (p 16) . . . Stator for Consolidated Edison's East River Plant comes to town by a circuitous route (p 22) . . . Detroit Edison Co worked out a letter writing contest with a kicker (p 32) . . . Real estate groups in New York unite to fight Con Ed rate increase (p 42) . . . There's another good construction year ahead (p 50).

• • •

Latest from Washington—Plans for meeting the power needs of AEC expansion program were discussed at a recent Depa meeting attended by utility and AEC officials. AEC wants a committee, with top security clearance, to deal with the matters involving power for the new installations. Site of new $1¼-billion AEC gaseous diffusion plant is in Pike County, Ohio, on Scioto River between Wakefield and Piketon. Power to serve the installation probably will come from 1.8 million-kw plant to be built nearby . . . Industrial dispersion of plants is a new factor to be considered by DPA in granting rapid tax amortization certificates for power plants . . . Because of steel strike, changes have been made in the self-certification regulations for utility service buildings . . . Warrior River Electric Co-op Association of Oneonta, Ala., has asked FPC for a preliminary permit for a 17,800-hp hydro project on Locust Fork of the Black Warrior River in Blount County, Ala.

From New England—Bob Fairbrother of Western Massachusetts Electric, Greenfield distribution department and now in U. S. service in Japan, writes home that telephone companies in smaller Nippon towns furnish bicycles to linemen rather than cars and trucks. Small trailers hook on the back of bicycles and Bob has even seen a lineman pedalling along with two 25-ft poles following.

From the Southeast—One of the unusual loads served by South Carolina E&G at AEC Savannah River hydrogen project is 6,000 trailers used for construction employees' temporary living quarters. Each trailer has an electric range, water heater, refrigerator, fans, lights, etc . . . Tampa Electric is testing use of germicidal lamps in all air-conditioning ducts of their Tampa office building to determine their effect on absenteeism, employee efficiency, etc . . . Florida Power estimates that within another five years, FPC will reach its peak load in the summer because of air-conditioning growth, continued popularity of area as a year-round resort, and increasing industrial development.

From the Far West—Security restrictions at Bonneville Dam have been relaxed, except unrestricted access to the power house. Project is again available to public.

Accounting—Tampa Electric will have complete IBM billing and Remington Rand bookkeeping machines in operation by October . . . Pennsylvania Electric announces that within two months the company will read meters and bill customers every two months instead of monthly.

Appliances—Florida Power Corp sold 677 room air conditioners in June as compared with 635 for entire year 1951. FPC also sold 20 heat pumps in first six months of 1952 compared with 18 for entire year of 1951. Company has established a new air-conditioning department headed by Guy Hall, formerly in commercial sales department. The other employees in the department will come from the residential and commercial sales department.

Financial—Although Spartanburg, S. C., City Council refused Metropolitan Transit Co's request to take over the bus system in that city from Duke Power Co, the transit company will continue its efforts to do so. City Council gave no reason for its action.

Labor—Florida Power Corp and IBEW-AFL agree to 10% wage increase. Employees not covered by the agreement will get a comparable increase, company announced . . . Tampa Electric and IBEW-AFL agree to 10% cost-of-living wage increase, retroactive to May 1.

Rates—In order to prepare additional testimony, West Virginia PSC has given Appalachian Electric Power until Sept. 29 to present its arguments for $3.7-million a year rate hike . . . Public hearing will be held on a petition of City of Andersen, Ind., to reduce rates by about 15%. No date has been set because of a heavy docket of cases before Indiana PSC . . . Cambridge (Mass.) Electric Light gets Massachusetts Department of Public Utilities Approval to increase rates by $401,000 a year as compared with $565,000 requested . . . Western Massachusetts Electric's Silver Lake Station in Pittsfield, used for three years to generate steam for resale, has been taken out from company's electric rate base in DPU decision increasing rates about 4.9% . . . Duke Power's $1,909,000 rate hike granted by North Carolina PUC will not be appealed to the courts, Attorney General Harry McMullan announces. He says it is doubtful if he has the right to appeal the decision of the commission.

Morris E. Osburn resigns as chairman of Missouri PSC because he wants to devote more time to his personal business.

Potomac Electric Power, whose 25-year contract expired Aug. 9, has announced it "strongly opposes" adoption by Montgomery County Council of a proposed ordinance granting Pepco a five-year $500,000 franchise. Pepco's objections are: (1) $100,000 annual charge; (2) provision which would permit the council to order Pepco to put its lines underground; (3) shortness of term, five years; and (4) provision that would make franchise subject to alteration, amendment, or repeal at any time.

THE ELECTRICAL WEEK

CONTINUED

Tucson Gas EL&P has offered City of Tucson, one of the company's largest customers, an 11.82% average rate decrease (about $19,335 yearly) . . . Whatcom County PUD, Bellingham, Wash., retains W. C. Gilman & Co to survey and estimate the worth of Puget Sound P&L properties . . . PUD No. 2 Grant County, Wash., has indicated it is interested in building $250-million Priest Rapids hydro project even though Congress has authorized its construction by Army Corps of Engineers . . . Arkansas Gov Sidney S. McMath was defeated by Judge Francis Cherry in his bid for renomination in the state's runoff primary . . . Court of Appeals of District of Columbia turns back to FPC for further consideration New York State Power Authority's proposal for St. Lawrence River power project. The agency had appealed from an FPC order in December 1950 which denied its application for a license for the development . . . Several severe wind and rain storms struck Duquesne Light's system July 28, causing more damage at one time than company ever before had experienced . . . Under terms of its wheeling contract with Pacific G&E, USBR has asked PG&E to deliver Central Valley Project power to Sacramento Municipal Utility District and four other potential customers . . . Possibility that Bonneville Power Administration might build a $4.5 million receiving substation which Seattle City Light is preparing to build itself is advanced as one reason for an investigation of City Light by Mayor Allan Pomeroy.

IN THE INDUSTRY

Human nature being what it is, it is bound to enter into the interpretation (to one's own advantage) of any legislation. An example of this is the interpretation put on the Rural Electrification Act by the electric cooperatives. There isn't a particle of doubt that the law was passed solely to bring electricity to persons in rural areas not receiving central station service. But that was a long time ago. Now hundreds of co-ops are prospering. Despite the many special privileges accorded them because they are performing a social service, they look upon themselves as utilities. And any utility hates to lose a good industrial customer. The result is that a co-op doesn't hesitate to battle a power company for one. A recent case of this was the struggle between the Taylor County Rural Electric Cooperative and Kentucky Utilities Co to serve the Union Underwear Co of Kentucky.

Utility Followed Its Customer . . . The underwear company moved from Campbellsville to a site outside the city. Its power supplier, Kentucky Utilities, extended a line across co-op territory to the new site. The co-op complained to the Kentucky Public Service Commission.

In its ruling the commission went into the history and intent of the Rural Electrification Act and cited similar cases in other states. It pointed out that the co-op bought its power at a commission-ordered preferential rate from the utility and the unfairness of ordering such a sale to a competitor (the co-op).

As to the charge that the utility was duplicating the co-op's facilities, the commission said no. To serve the manufacturer the co-op would have to enlarge greatly its present facilities.

Disadvantages as Well as Advantages . . . Furthermore, the commission set down the dangers to the co-op and its members. The manufacturer would take a quarter of the co-op's entire demand and would require a third of its sales. If the co-op should enlarge its facilities and the manufacturer should close his plant, the effect on every member would be detrimental. By statute the co-op is forbidden from doing more than 25% of its total business with non-members. Assumption of the underwear company's load would practically bar the co-op from serving other non-members whose needs are more in harmony with the scope and purpose of the Rural Electric Program.

So the commission dismissed the complaint. But human nature being what it is, there is no doubt that the co-op members will keep right on complaining.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Plenty of emergency lighting is conducive to quick and safe restoration after emergency outages.

Coal mined in Britain in 1950 was actually less than in 1900. Meanwhile kwhrs generated increased 430 times.

Twin-insulation of generators can be tested at 1,000 volts or more per turn by inducing in the coils such voltages through the means of alternately excited induction coils. Dissymetry is detected by oscilloscopes connected to the coils.

Poster nails (large heads) were pulled from a single pole to the tune of 18 oz. Each was a hazard to a climbing lineman.

Cavitation-characteristic effect on runaway speed can be neglected with a Francis turbine but is very significant for a Kaplan.

Power transformers can readily be built larger than rail shipment can accommodate.

Interlocks are needed on compound conveyor systems so that if one conveyor should stop all preceding conveyors will also be stopped. Otherwise pile-up or spilling.

Present day thermal efficiencies of 36% or more are 36 times as good as the 1% of Newcomen's engine and nine times the 4% of James Watt's engine.

Lightning strokes per square mile per thunderstorm day range from an average of 0.28 in northern to 0.43 in southern U. S. A. areas.

Solid patterns now demanded by foundries for large steel castings cost 2 to 3 times as much as the skeleton patterns formerly accepted.

Alkaline dust in turbulent furnace atmosphere tends to neutralize the acids generated in the combustion process. Helps explain why corrosion in boilers is not worse.

Accidents seldom occur during emergency restoration after storm damage—even to the foreign crews unfamiliar with the lines. Why? The hazards are multiplied, too.

DPA Plans Wider Power Expansion

- **Capacity goal of 42 million kw extending through 1955 is revised program drafted by mobilization agency**
- **New proposal would make it possible for more utility projects to qualify for rapid tax amortization**
- **Longer expansion period would enable 1955 projects to get a better break on material allotments**

The Defense Production Administration is putting the finishing touches on a revised electric power expansion program. The new goals would supersede the three-year 32-million kw program approved in March.

Probable changes:

- Length of the program will be extended to four years making it a 1952 through 1955 affair.
- Installed capacity goal will be boosted from 32 million kw to somewhere in the neighborhood of 42 million kw for the four-year period.

The proposed revisions will have to be approved by Deputy DPA Administrator Ralph S. Trigg before becoming official. They were scheduled to be in his hands by Aug. 14, and it was possible that he would clear them within a few days. However, there was some question as to whether the mobilization agency would want to involve itself in pushing expansion of a defense-supporting industry beyond 1954.

If approved, the new expansion goal would have two important effects on the electric utility industry.

Tax Benefits . . . First, it would make it possible for more projects to qualify for rapid tax amortization certification. At present certificates can be issued only on projects that will be in service by the end of 1954 and are within the 32 million-kw goal. This means that most of the additional capacity needed to meet the Atomic Energy Commission expansion program is not eligible for rapid tax amortization benefits.

Second, the new expansion program would give 1955 projects a better break on material allotments. At present it is possible that Washington control agencies are concentrating on the present three-year program—at the expense of expansion needed in 1955.

Immediate factor in realigning the power program is the steel strike which has disrupted the flow of the vital metal to the electric industry. With military and AEC requirements getting the top priority on steel now coming off the line, there is still no reliable assessment of the loss to be suffered by electric utilities. By extending the length of the power expansion program, officials hope to make up for some of the losses suffered because of the strike.

But the strike was merely a contributing factor. Power expansion schedules were lagging even before the strike began. This was caused mainly by insufficient allotment of vital metals last year for heavy equipment such as boilers and turbines. It was estimated that the industry would fall about 2 million kw short of its 9-million kw goal for this year, and the strike had almost no effect on 1952 in-service schedules.

Lag Seen . . . With the strike losses, some experts now believe that the industry may fall some 2 to 3 million kw short of its 12-million kw goal next year. This would make a total lag of 4 or 5 million kw in two years.

Possibly the most important reason for revising the expansion program is to include the new power demands of AEC.

Since the 32-million kw program was approved in March, AEC has gained Congressional authorization of added plant facilities which will require some 4 million kw. Much of the new capacity will not be required until 1955—after the present power expansion program has expired. Revision of the program, therefore, will aid utilities in meeting the AEC demands.

While revision of the present power program will ease some problems, there is still the question as to whether power expansion will be in line with power demand during the winter peaks of 1953 and 1954. Some officials fear the steel losses will put the industry too far behind to catch up next year or in 1954.

Because peak estimates for the present year have been lowered, there is less concern over the power supply during the coming winter.

Vernon Northrup . . .

. . . has been appointed Undersecretary of Interior to succeed Richard D. Searles

Vernon D. Northrop, government management expert, will become Undersecretary of Interior Sept. 1, succeeding Richard D. Searles.

A government career man with nine years service at Interior, Northrop has been head of the department's Office of Administrative Management since November 1949.

In his new position, Northrop will rank second only to Sec Oscar L. Chapman in the department hierarchy. If he follows the pattern set by Searles, he will handle some of the problems that come up from Defense Electric Power Administration.

Northrop was born in Scranton, Pa., in 1915 and was graduated from George Washington University in 1938. Besides his government work, he has lectured on government management at American University.

Searles, who has resigned, became undersecretary in April 1951.

The idea that you could redraw the utility system map of this country to set up far more economical combinations of companies has intrigued engineers and power executives for years.

Securities and Exchange Commission, under its boss of six months, Donald M. Cook (right), not only is getting set to draw the map, but is laying plans to try to make the actual situation fit the redraft.

Robert Phillips

"I'll never let us be drawn into the public-private power controversy."

The New Cry: 'Integrate and Combine'

For the first time a federal government agency is tackling the job of an area-by-area study of existing, planned and proposed electric and gas utilities with a view to recommending the most economical organization of systems. Only ground rules on the size of the proposed combinations is that they not be "so large as substantially to affect the political life of the area and thwart local regulation."

Within these broad limits, Securities and Exchange Commission experts will draw up their suggestions for reshuffling the utility systems in every area of the country. A five-man group at SEC is already busy laying the groundwork for the studies and reports that are to be made. Plan now is for the new section to concentrate first on electrical systems. Gas utilities will come in for study later.

This new task calls for a change of course at the regulatory agency, but not a retreat. For the last 15 years the agency has been militantly breaking up the vast and scattered utility holding company systems into smaller, integrated, simplified operating companies. That job is nearly complete (EW, June 23, p 17; July 21, p 10).

New Job . . . The task ahead is to take a look at the existing operating companies and see whether it is possible to integrate their facilities or management into more efficient and economical combinations.

In breaking up the holding companies, SEC has full legislative authority to enforce its directives, and this has withstood all court tests. In contrast, the commission has no authority to enforce recommendations that will be made in the integration reports. It will depend entirely on voluntary action of the parties involved. At present the agency has no intention of asking for compulsory power.

Charting this new course for SEC is Donald C. Cook, an old hand at Congressional investigations who became commission chairman in February. Up until the time he became chairman, Cook was chief counsel of the Senate Military Preparedness Committee, which debunked the mobilization schedules last fall. He still acts as sort of "elder statesman" to the Senate committee.

First directive Cook gave to the commission staff in February was to clear up the remaining holding company cases. He is now fired with the potentialities of utility integration and expects the new commission reports to stir some of the old enthusiasm that characterized the agency in its New Deal youth.

Complex Ohio . . . Taking a look at a map of the electric utility systems in Ohio, Cook remarked, "It would indeed be a miracle if studies of such crazy quilts did not bring out many opportunities for substantial economies in the areas served."

As Cook explains it the utility integration studies should prove attractive to everybody concerned—the in-

vestor, the consumer and the public. Main objectives would be to lower the costs of construction and operation and thereby lower the rates to consumers. The economies should also be great enough to give the investor a better return, he thinks.

Certainly a number of recent mergers of smaller electric systems into larger ones gives weight to Cook's argument. Within the past year, Federal Power Commission has processed a number of merger applications. Still others are awaiting decision.

Cook believes mergers already underway by electric companies are a step in the right direction, but he thinks the SEC study may give a comprehensive blue print of further economies. There may be cases, he hints, where present management of small companies have a vested interest in an uneconomic system and are now resisting integration.

The studies, he believes, will expose these uneconomic situations to the public. In this way they may be more quickly eliminated.

Schedule . . . Cook has set up a tentative sequence for the studies he proposes to undertake. First step is the organization of a group to formulate a written program, specifying the form and content of the studies to be made and the areas to be studied. When the program is set up, it will run something like this:

- Task forces will be organized to collect information on the electrical systems for each of the areas designated.
- After collecting the information, the staff will write reports containing recommendations for the most suitable combination of systems.
- Then electric companies and public power agencies which would be affected by the recommendations will be called in to discuss the reports. Cook hopes they will voluntarily accept some or all of the recommendations.

Initial phase of the studies will be based almost entirely on data already collected by SEC and other federal agencies. As far as can now be determined there will be no questionnaires sent directly to electric utilities. No public hearings are contemplated in connection with the studies. However, once the reports are completed, SEC does propose to discuss recommendations with the utilities and state commissions.

As a veteran Washington operator, Cook is acutely aware of some of the pitfalls this new course will have. Unless he is smart enough to avoid them, the reports may never be written.

Most obvious hazard of the course is the always sizzling private-public power controversy that touches on all federal matters even remotely connected with electric power. Since Cook announced his new venture a few weeks ago, partisans have been studying it to see where it might lead. Up to now there has been no statement from either public or private power advocates, but it is a good guess that both are wary of the idea.

Possibilities . . . One possible conclusion the studies may reach is that a number of rural electric cooperatives could be more economically and efficiently operated if integrated with large privately-owned systems.

In its weekly newsletter, American Public Power Association has told members that one important recommendation may be integration of many smaller municipally owned utilities and co-ops with larger privately owned systems.

In some areas, the studies may indicate that electric companies should be acquired by large federal systems.

Cook's own observation is, "I'll never let us be drawn into the public-private power controversy." Considering the scope and purpose of the studies, the SEC chairman will have to do some fancy steering to reach his objective.

Another obstacle in the new course is a possible jurisdictional dispute with Federal Power Commission, which already has jurisdiction over a wide area of interstate electric systems. FPC routinely collects a good deal of the information SEC will need in its studies. The agency already has authority under the Federal Power Act to order interconnections between electrical systems in some instances.

Tough Nut . . . But if Cook is successful in getting ahead with the original studies and reports, his big battle may come after that. Toughest nut to crack will be applying the recommendations on a voluntary basis. About this Cook is philosophical: "Either they will make the grade on their merits, or they will be sidetracked."

Despite the drawbacks, chairman Cook is optimistic that the reports will be made and some of the recommendations will be carried out. This new task fits right into his philosophy of government regulation. He believes SEC and other regulatory agencies constantly should be seeking to serve the public in a constructive way.

Comments Cook, "There's more to the job of the regulator than just saying no."

Oxbow Hearing Set Nov. 17

Opposing attorneys have agreed on Nov. 17 as the date to start presentation of technical evidence before the Federal Power Commission in Washington D. C. in connection with Idaho Power Co's application for a license to build a hydroelectric plant at the Oxbow site on Snake River.

Agreement on the date followed four days of preliminary testimony—two days at Baker, Ore., followed by two days at Boise, Idaho.

At issue is Idaho Power's proposed 140,000-kw power plant at Oxbow, a site which would be flooded by the multipurpose Hells Canyon Dam proposed by Bureau of Reclamation.

The Oxbow plant would be the first of five low-head dams planned by the company, generating 714,000 kw and costing about $134 million. In contrast, the high-level—740 ft—Hells Canyon Dam would cost about $356,810,000 and produce 688,000 kw.

Idaho Power spokesmen, appearing at the hearings, stressed the fact that a privately constructed utility would represent a source of tax revenue not afforded by a government project. They also pointed out irrigation water rights are protected in the company's filing, and the Hells Canyon project would jeopardize the availability of Snake River water for farming purposes.

Public power proponents, opposing the Oxbow application, stressed the fact the proposed low-head dam would eliminate any future consideration of the Hells Canyon project.

They also called attention to the fact the high-level government dam would be a guarantee of constant flow on the Snake River.

Two Plants Will Supply AEC in Ohio

The 15-company Ohio Valley Power Corp will build two separate power plants on the Ohio River to supply 1.8 million kw needed at the new gaseous diffusion plant Atomic Energy Commission just announced it will build on the Scioto River just north of Portsmouth, Ohio.

Total capacity of the two plants will be 2.2 million kw, and total cost of generation and transmission facilities, $400 million. This was announced last week by the 15-company group, organization of which was pushed by American Gas & Electric Co in New York.

AG&E president Philip Sporn said the power group was "looking at sites all over the area," and had taken some options, but as yet had made no determination of the exact location of the two plants.

"No answer can be made on this," he commented, "until the studies being made are completed, and until the power supply contract is signed with AEC."

Last week's announcement by the commission that it had finally selected a site removed a barrier that had slowed negotiations over the past several months.

This week in Washington those negotiations are nearing completion. Construction of power facilities can be expected to begin immediately after agreement is reached, according to a spokesman for the Ohio corporation.

Persons involved in the negotiations said they believed the contract, involving as it does 1.8 million kw capacity for a single AEC installation, is the largest of its type ever undertaken.

To Use Private Power . . . Under present plans, the Ohio Valley Power Corp will supply the interim and the permanent electric power needs for the plant. The AEC installation will turn uranium 238 into the fissionable uranium 235. Fissionable uranium is a vital ingredient of the atomic bomb.

Interim power for construction and partial operation of the AEC plant will require a capacity of some 400,000 kw, which will be supplied from existing facilities of the companies negotiating the contract (EW, July 21, p 15).

Full operation of the gaseous diffusion plant will require capacity of up to 1.8 million kw. Ohio Valley Power Corp will install this vast generating capacity in two separate plants. These will be coal-fueled, steam-driven generating plants probably built at some distance from the AEC installation.

Plants on Ohio . . . Negotiations between the Ohio corporation and AEC up until the middle of last week assumed the two power plants would be built on the Ohio River. One would be in southeast Indiana near the Ohio and Kentucky borders. The other would be in the southern tip of Ohio in the Portsmouth area.

Exact size of these plants has not been determined, but economics of the situation tends to indicate that the Indiana plant will be the larger since fuel costs there are lower.

The corporation probably will depend on eleven 200,000 kw generating units to supply the high-load-factor AEC load. This will afford some reserve for transmission losses, maintenance, and possibly additional requirements that come as an adjunct to the AEC installation.

Present plans call for the transmission system between power and AEC plants to have a capacity of 330 kv. This system will be tied into the high tension transmission system of American Gas & Electric, which already has some 330-kv transmission facilities.

One reason for separating the generating facilities of the AEC plant is to give a greater measure of security in case of natural or enemy-caused disaster. But there is also understood to be some engineering and fuel-cost factors that entered into the decision to build two power plants rather than one.

The Scioto River AEC plant probably will not be in full operation before late 1955 or early 1956, but partial operation is slated to begin in 1954. Expansion of operations at two other AEC plants—Oak Ridge and Paducah—will get priority over the Ohio plant. Additional capacity totalling 950,000 kw of electric power will be required at Oak Ridge, and about 840,000 kw at Paducah.

Serious Difficulty . . . Main difficulty still facing negotiators of the power supply contract for the new AEC plant is the limitation on contract cancellation charges which Congress wrote into the supplemental appropriations bill. This rider prohibits AEC from committing itself to pay more than $57 million for cancelling all of its power supply contracts. This ceiling may be raised by later sessions of Congress, but this does not help present negotiations.

It is understood that life insurance companies have offered to share a large portion of the financing for the power plants.

402 Billion Kwhr

That's the average of output predictions submitted independently by industry leaders to the Hatfield Power Pool

Output of central electric stations in the United States in 1952 will be 402 billion kwhr, an increase of 8½% over last year.

At least it will be if the contestants in Bob Hatfield's power generation pool are correct. Last year the average of the pool was within 0.4% of the actual figure. This was the most accurate prediction by any group.

This year's pool has 296 entries including 26 utility company presidents. The contestants come from 93 utilities, 10 consulting engineering firms, 11 power equipment manufacturers, and 4 government agencies. Geographically they are from 38 states, and the District of Columbia.

Bit High? . . . Most of the estimates this year were made before the start of the steel strike. This could mean that the estimate is a bit high.

The winning figure will be that carried in the 1953 Statistical Issue of Electrical World.

Fifth Year . . . Hatfield, a Combustion Engineering-Superheater vice president with headquarters at Los Angeles, started the pool in 1947 with 45 participants. It grew out of a pool previously conducted by personnel of the Office of War Utilities with which Hatfield served during World War II.

No. 6 IN A SERIES

A DISTRIBUTION ENGINEER ASKS—

"How can we reduce transformer bushing flashover caused by air-borne contamination?"

It can be done quickly, easily and economically simply by installing Pinco L5206 Fog Caps.

here's the answer:

As a matter of record, these Fog Caps have been in use on installations in coastal areas for several years and are now finding popular acceptance wherever "fog" conditions exist—particularly in those areas where air-borne industrial and chemical wastes are a constant source of trouble to transformer efficiency.

So if you are confronted with a similar problem, then the Pinco L5206 Fog Cap is the "idea" that will help you to eliminate costly and annoying "outages." Available in various sizes to meet your requirements. Drop us a line . . . we'll be glad to give you complete details.

FEATURES OF THE PINCO L5206 FOG CAP

1 **PROTECTS** upper part of bushing from contamination; also keeps it dry, thereby maintaining an effective leakage path.

2 **ELIMINATES** annoying service interruptions caused by bushing "flashover."

3 **EASY TO INSTALL** on present equipment. Just remove bushing terminal and place PINCO L5206 Fog Cap in position and replace terminal. Cap is equipped with coroprene gasket.

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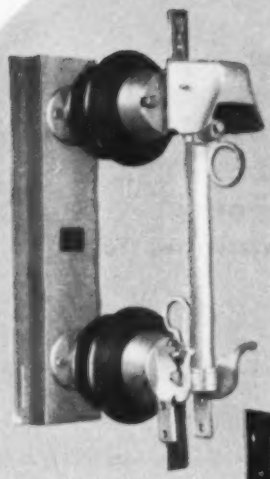
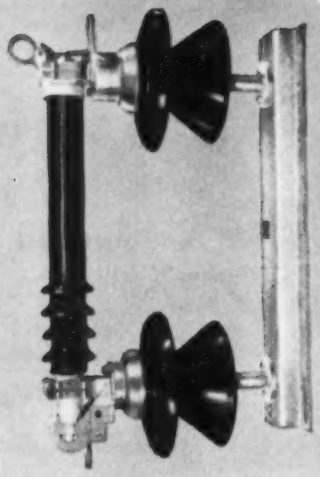
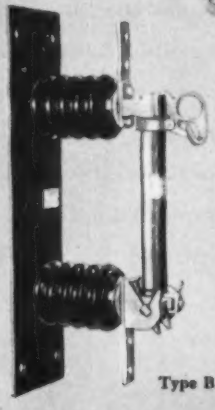


Type DBA (Drop-out) Power Fuse



Type BA Power Fuse

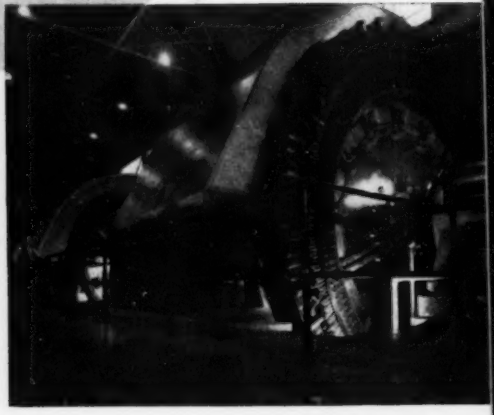


Type BAL (Current-Limiting) Power Fuse

DESIGN TESTED AND VERIFIED in the Westinghouse HIGH POWER LABORATORY

THE SEAL THAT SAFEGUARDS YOUR INVESTMENT

In a typical High Power Laboratory test, a Type DBA Fuse is shown interrupting the equivalent of a 3-phase, 1,000,000-kva fault. An instant after the photo was taken, the drop-out element operated, isolating the circuit.



Source of the laboratory's tremendous power are these two 60,000-kva generators. When paralleled, they are capable of delivering a 3-phase fault of 2,500,000 kva, or a single-phase fault equivalent to 4,000,000 kva.

ONLY *CONTROLLED* LABORATORY TESTING CAN PRODUCE THESE RESULTS:

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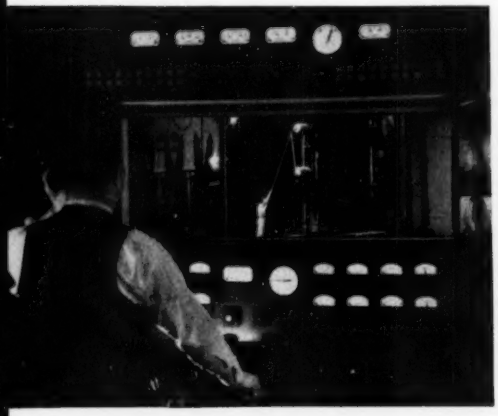
In 1931, the Westinghouse High Power Laboratory—already five years old—played a major role in the development of the boric acid fuse. Conducting multiple tests under controlled conditions not available in the field, Westinghouse Laboratory technicians proved conclusively the soundness and superiority of the boric acid interrupting principle. The result is a complete line of low-cost protective devices proved to a degree unattainable by other means of testing. Considering the extent of your investment in fuse-protected equipment, this extra measure of sureness is an invaluable advantage. And it's one you get only when you specify Westinghouse.

Continued High Power Laboratory testing has also widened the application of this economical means of short-circuit protection. From the first Type BA Fuse, low-cost interrupting capacity has advanced with the development of Types DBA (drop-out) and BAL (current-limiting) until now 138,000-volt fuses that interrupt one million kva are available.

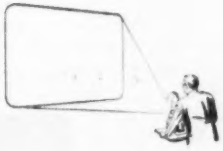
FOR COMPLETE INFORMATION on Westinghouse Power Fuses ask for a copy of Booklet B-5469. Contact your Westinghouse representative or write: Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-60781



From this control desk, a single operator guides all high power testing facilities. The control room also houses indicating instruments, protective relays, sequencing drums, and oscillographs which simultaneously record as many as eighteen variables.

See "Electrical Proving Ground"

...the dramatic story of the Westinghouse High Power Laboratory in sound and color motion picture. For details, see your Westinghouse Representative, or write: Westinghouse Film Division, Box 868, Pittsburgh 30, Pennsylvania.



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POWER FUSES

BUCK STEAM STATION

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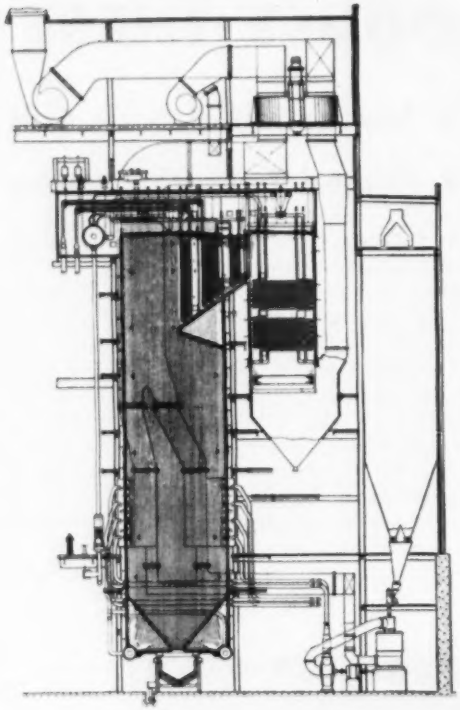
C-E controlled circulation boilers



The C-E Unit shown above is one of two duplicates now in process of fabrication for the Buck Steam Station, Spencer, N. C., of the Duke Power Company.

Each of these units is designed to serve a 125,000 kw turbine-generator operating at a throttle pressure of 1800 psi with a primary steam temperature of 1000 F, reheated to 1000 F.

These units are of the controlled-circulation, radiant type with a reheater section located between the primary and secondary superheater surfaces. An economizer section follows the rear superheater section and regenerative type air heaters follow the economizer surface.

Pulverized coal firing is employed, using bowl mills and tilting, tangential burners.

B-594

C-E

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Power Figures as Hot Issue

California Republicans and Democrats differ sharply on development of water, hydroelectric resources

Development of water and hydroelectric power resources promises to be a hotly contested issue in the California elections this November.

The platforms of the Democratic and Republican parties differ sharply on the subject, with the former generally favoring continued federal development of such resources, and the Republicans advocating state control.

State Control . . . The Republicans water and power plank "applauded" the action of the state legislature in making available $10 million as a down payment for possible acquisition of the Central Valley Project from the United States. The project now is operated under federal reclamation laws.

But the Democratic platform says, "We cannot endorse the proposed state purchase and operation of the CVP until such time as proof is offered that state operation will not hamper the orderly development of necessary additional projects; that it will provide water upon the land at a cost as low as that provided by federal operation, and that the public interest will be fully protected."

The Republican water and power plank said the objective of putting to beneficial use the water resources of the state "must be attained without delay, not only to meet the demands of our rapidly growing population for an adequate water supply but also to provide for the generation of much needed electrical power."

Local Development . . . "Projects and developments contemplated by and consistent with the state's water plan," the platform continues, "should be undertaken by the most localized entity that can feasibly undertake them without delay."

The plank says, "we are unalterably opposed to any first form withdrawals by the Bureau of Reclamation which interfere with the study or construction of water and power projects within the State of California."

This section referred to recent action by the bureau in withdrawing from private entry power reservoir sites along several California rivers.

Predicts New Policy . . . "We are confident that when Republican leadership regains control next January," the Republican platform adds, "all of the bureaucratic philosophy which disregards and seeks to circumvent local law, local needs, local interest and local knowledge will be replaced by cooperative effort to work with the people of California and of other states in the solution of their individual water problems.

"We will be assured of the abandonment of the advocacy in such instances as the tidelands case, the Fallbrook seizure case, the Carson-Truckee Rivers case of the principle or paramount rights of the federal government in all fields where historically states rights have prevailed."

The Democratic platform emphasizes "existing projects, valuable as they are, fail to meet the needs of water users throughout the state."

Pledges Wider Program . . . The Democratic plank adds:

"The Democratic Party, exercising its historic role in sound water development, recognizes these deficiencies. We pledge our full energies in the fight to develop additional projects and programs of water resource development for irrigation, flood control, salinity control, navigation, recreation and hydroelectric production."

The Democrats believe the programs should be undertaken by the agency, regardless of whether it is state or federal, which is first willing and able completely to develop needed projects in the shortest possible time.

Another paragraph calls for transmission lines and standby steam power plants.

Multipurpose Projects . . . "Revenues from the sale of electric power make possible water rates low enough to meet the needs of our California agriculture," it reads. "We therefore favor the development of our water resources through construction of multipurpose projects together with necessary transmission lines and steam generating plants to insure the full economic feasiblity of the project with priority for use of project power to public agencies."

The two major parties did agree on one point. Each party urged adjudication by the United States Supreme Court of Colorado River water rights.

POWER BRIEFS

● First phase of a six-year rural electrification program, costing $6 million, gets underway in Puerto Rico this month. The over-all program, undertaken by the Puerto Rico Water Resources Authority, consists of 400 rural electrification projects. Materials and equipment have been purchased for the first 70 projects approved by the planning board.

● One of the earliest hydroelectric powerhouses still existing, the historic Electra Powerhouse on California's Mokelumne River, has been sold for dismantling by Pacific Gas & Electric Co. The plant, which went into operation in 1902 and was incorporated in the PG&E system in 1905, was taken out of service in 1949 after the utility completed the enlarged Electra Powerhouse nearby.

● Just when Inter-County Rural Electric Cooperative, Hillsboro, Ohio, thought it had everything under control after an electrical windstorm, a snake in the grass came along to do more damage. The snake, an ordinary black one, crawled through a substation fence in quest of a robin's nest and electrocuted himself on a 69-kv line. About 2,000 customers were without power for an hour.

● Load-spreading will continue in Great Britain this winter in spite of increased generating capacity and an easing of industrial demand for power. The government is asking industry to reduce its consumption at peak periods by 10% from Nov. 1 to Jan. 31, 1953. These measures are less severe than those in effect last winter when a 20% cut was asked over a five-month period and staggered work hours called for where possible. It is estimated the deficit for this winter will be 1,000 Mw if average weather prevails.

Prices 'Fixed' . . .

. . . says British Monopolies unit in urging end of practice in wire and cable industry

Great Britain's Monopolies Commission recently urged that price-fixing and agreements preventing or restricting competition in the insulated electric wire and cable industry be ended. Such practices are outlawed by the Monopolies and Restrictive Practices (Inquiry and Control) Act.

In a report the commission stated the Cable Makers' Association and the Covered Conductors' Association, which account for 80% of British cable production, have acted to prevent or restrict competition.

Members of CMA, the report says, observe common selling prices and conditions of sale and have established minimum standards of quality, common standards of quality, and common standards of type and design.

The association also was charged with setting up quota and allocation systems, granting aggregated quantity rebates, and having exclusive dealing agreements.

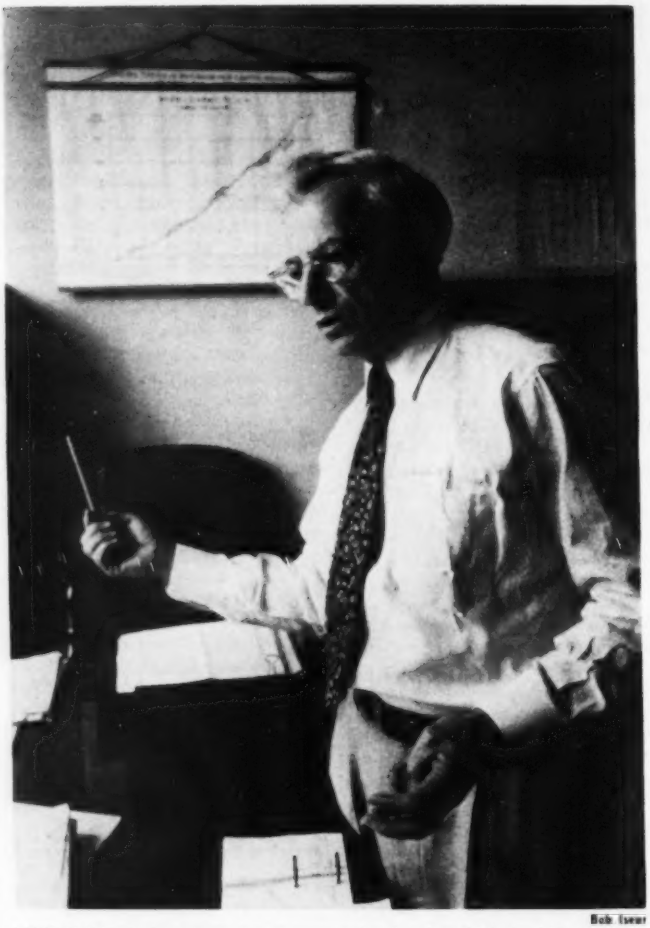
CCA members operate under similar agreements, the commission noted.

$45-Million Utility Project Ruled in Morgan County

A spirited boundary dispute between two Ohio counties which arose when Ohio Power Co decided to build a $45-million power plant on the shore of the Muskingum River has been resolved. A common pleas judge has ruled the tract of land on which the plant is being built belongs to Morgan County rather than Washington County.

The ruling was sought by Ohio Power. At stake was an estimated $250,000 in tax revenue the utility will turn over to county officials when the 400,000-kw plant is completed.

The judge's ruling in favor of Morgan County was based on an 1817 statute creating Morgan County out of Washington County. The court held that Morgan County in failing to collect taxes on the piece of land in question from 1871 to 1951 while allowing Washington County to do so did not forfeit the land to Washington County.



Bob Isear

LOUIS BEAN looks for patterns in past events and makes them the basis of his predictions

Meet a Flood Forecaster

Faith in the orderliness and periodicity of nature has enabled Department of Agriculture economist Louis Bean to do some pretty accurate long-range flood forecasting.

For three out of the last four years Bean had hit the mark with his predictions of stream flow on the Columbia River. His forecasts are based on recorded data for past periods.

Hydrologists Cautious . . . Professional hydrologists, although they respect his ability and honesty, have not endorsed Bean's simple method of forecasting river conditions wholeheartedly. They prefer precipitation and snow moisture data for their forecasting. Bean's forecasts, they feel, are valuable chiefly as a check against their own.

Bean has no argument with them on their periodic checking methods. He knows field data are essential for constant and immediate runoff computation. But he feels that his method has proved its value and validity for long-range trend forecasting, far beyond the short-term limits of field observations.

After studying stream records, Bean early in 1949 forecast the Columbia River's peak annual discharge at The Dalles, Ore., for each of five years, 1949 to 1953, inclusive.

His 1949 estimate of 680,000 cu ft per second compares with an actual flow of 620,000 cfs, the 1950 estimate of 710,000 cfs with 743,000 cfs, and the 1951 estimate of 600,000 cfs with 597,000 cfs.

Prediction Off . . . Bean's only miss so far has been with this year's forecast. Maximum flow at The Dalles over a 24-hour period was 556,000 cfs, reported on May 28. Bean had forecast a flow of 700,000 cfs.

The U. S. Weather Bureau predicted a flow of 780,000 cfs at the start of April, dropped it to 675,000 cfs early in May, and then revised it to 580,000 cfs about the middle of May. So while the government's hydrologists walked off with the medal for 1952, they made use of last-minute field information.

In explaining the 20% error, Bean said he had no illusions as to the efficacy of his 1949 analysis for forecasting peak flows five years ahead. He expected discrepancies—particularly in the later years.

Revision Necessary . . . Technically, Bean takes this discrepancy as a warning that his analysis must be reset—in his words—to forecast future years. He no longer considers his earlier forecast for 1953, never made public, valid.

His process calls not for continuous analysis of the entire record of the river but for analysis of segments of the record. The 1952 peak discharge indicates new factors or conditions not present in the 1949 analysis. Accordingly, he says, the analysis must be reset in the light of this development to forecast the maximum discharges for the next few years.

Bean's method assumes an orderly cycle in natural phenomena. Despite the random, apparently unrelated character of recorded data for such things as stream discharges, Bean believes that there is an underlying order and periodicity in the workings of nature. The trick, of course, is to pick the significant periods in past records that set the pattern for cyclic forecasting.

If you ask how he does it, he will tell you he uses "a simplified method of graphic multiple curvilinear correlation applied to analysis of time series." Even after that explanation, you probably won't be able to do the same thing yourself. At any rate, you almost certainly won't get the same results.

Saw Trouble . . . Bean has much evidence to back up claims for his short-cut forecasting technique. His chart of annual discharge of the Missouri River at Sioux City, for example, pointed to trouble this year. He cites it as another illustration of the validity of the Bean approach.

This approach, he says, "begins to suggest opening up an extensive field of investigation."

Bean is more than willing to be pushed into such broad investigations. But the push will have to come from private business or a foundation. The job cannot be done in Washington, he feels sure.

Yet Bean has developed his method—largely as a hobby—during his 30 years as a government economist. He started with the Department of Agriculture and is on the same payroll today after tours with two other agencies. During the 1930's, his forecasts of farm and business conditions helped shape New Deal policies; the Fair Dealers also have consulted him.

As another argument for his approach, Bean points to the limitations of the usual procedures. On the Columbia River, the two high-water extremes occurred in 1894 and 1948. By no other method than time series analysis Bean says, would it have been possible to forecast those two floods, because no scientist or technician can—by ordinary processes—predict beyond his range of information. Each of the two floods exceeded anything that had preceded it.

Sticks by Theory . . . Bean has not tested his method on discharges of the Kansas (Kaw) River but he won't concede that his approach would have failed to predict the all-time peak flood that inundated the Kaw valley last year.

Hydrologists have strong doubts on that point. They admire Bean's success in forecasting annual peak flows for the main streams of tremendous basins like the Columbia and Missouri, but they question the possibility of doing the same thing for more limited watersheds, where freak weather produces concentrated effects.

In this vein, they point out that time series analysis may prove valid for rivers that are big enough to absorb—in large part—the fluctuations of one or of several tributaries. But they still have to be shown that Bean can make his system work in predicting floods for restricted watersheds.

Underwater Survey

U. of Washington is exploring 4-mile section of Puget Sound for laying of BPA cable

In an unusual underwater survey, the University of Washington oceanography department is exploring a 4-mile section of Puget Sound west of Seattle to depths of 700 ft in preperation for the laying of a 230-kv transmission cable by the Bonneville Power Administration.

Wide gaps exist in the oceanographic information of the area that might affect installation and operation. On the basis of the studies, university scientists expect to provide information necessary to reduce the possibilities of damage to the underwater cable of unprecedented length. Under an $11,850 grant from Bonneville, the oceanographers are gathering data on the nature of the bottom existing in the area, measuring the bottom currents, temperatures and salt concentration, and studying marine organisms that might damage the cable coating.

"Most similar installations in the past have been made with too little regard for the importance of the marine environment," said Dr Clifford A. Barnes, associate professor of oceanography, in charge of the project.

Power Output Unlikely at Eagle Gorge Dam

The proposed Eagle Gorge Dam on the Green River near Seattle probably will be of value only for flood control and not for power production, engineering studies have determined.

The dam originally was proposed only for flood control but the Federal Power Commission, in view of the acute power shortage in the Pacific Northwest, asked the Army Corps of Engineers to re-study the plans to determine if the dam was capable of power production.

J. M. Buswell, chief of the planning branch of the Engineering Division of the Seattle District Army Engineers' Office, now has reached the conclusion that such a use for the dam "appears improbable," since flood control would demand impounding water at the very time when power production would demand its release.

Filming Barry Plant's Rise to Power

Alabama Power Co has decided to show engineering students and other interested groups how a steam plant is built, from foundation to generator installation. The company is making a movie of construction work at its 250,000-kw Barry Plant, near Mobile, Ala. A sound track will be added when all sequences have been shot and edited. Handling the camera in the picture above is William Lavendar. With him is L. T. Ceravola, assistant superintendant of construction.

Drought in Southeast Eased

Heavy rainfall over much of the Southeast during the last two weeks has broken the six-week drought that withered crops and cut many hydro-electric operations to their lowest point in years.

The 2-to-7 inches of rainfall that covered the area recently raised reservoir levels behind most hydro plants.

There were still some local droughts in the Southeast, but on a regional basis, rainfall was considerably above normal.

Other parts of the nation did not fare so well:

- Except for coastal areas, the New England States were still short of moisture.
- A dry belt also extended from upper central New York state down through western Pennsylvania to southern Ohio.
- Rainfall in Montana and North Dakota is considerably below normal for this time of the year.
- Western two-thirds of Texas, and western Oklahoma and Kansas are also in need of moisture.

Loses 2nd Smoke Case

Consolidated Edison Co of New York has been fined $100 for the second time for violating New York City's smoke control regulations. The city charged unlawful emissions for six days up to and including Aug. 24, 1951, at the company's Hell Gate Plant in the Bronx. Earlier Con Edison was fined for violations at its East River Plant in Manhattan (EW, July 28, p 80). A third case involving alleged violations at a Con Ed plant in Brooklyn is pending.

Government Ownership of Atom Industry Discussed

The significance of atomic energy as the first industry wholly owned by the federal government was described by Wilfrid E. Johnson, general manager of General Electric Co's nucleonics division at Hanford, Wash. in a speech before the Northwest Professional Engineering Societies at Portland, Ore. on Aug. 9.

General Electric has been the AEC's prime contractor for operation of the huge Hanford Works plutonium manufacturing plant and the town of Richland since Sept. 1, 1946.

Johnson told his audience that the government's stated policy was to run the business as much as possible by utilizing private industry through appropriate contracts, a unique method of operating a nationalized industry, and one which has been subject to criticism.

AEC has sought to take advantage whenever possible of all the normal business methods and incentives available to private enterprise, while retaining full ownership and general direction of affairs.

The speaker said the book value of AEC's plant and equipment at the end of the 1951 fiscal year was roughly $1.9 billion. More than 100,000 persons are employed and the investment per employee runs about four times that of private industry, due to the specialized nature of the plants.

High Water Needed in Pacific Northwest

A shortage of power will occur in the Pacific Northwest this fall if water conditions should be median or less, the Northwest Utilities Conference Committee agreed at a meeting in Tacoma, Wash.

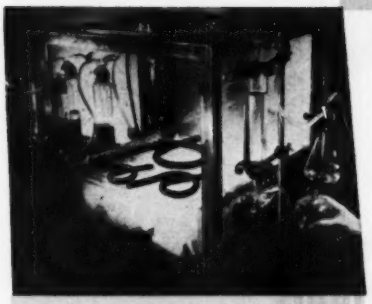
A median flow would result in a deficiency of 51,000 kw, which could be met by curtailment of interruptible loads totaling 502,000 kw. If a critical water year is encountered, a shortage of up to 643,000 kw could occur, necessitating a curtailment even of non-interruptible power.

A power shortage had been expected last year, leading to the curtailment of interruptible loads during a dry spell in September, but was averted when water flow the rest of the season was considerably above average.

4 AWG Stranded 3/C RoZone insulated, shielded, RoPrene sheathed power cable, 5000 Volts.

Rome RoZone®

Superior Ozone-Resistant Insulation Deserves Your CONFIDENCE



How Rome Cable Tests Ozone Cutting
Ozone resistance of insulating compounds is determined in an ozonizer. Specimens are subjected to ozone atmosphere of prescribed concentration. To see what happens note specimens below.

What Ozone Does to Cable Insulation

Unretouched photo of conventional rubber specimen after short-time ozone test.

Unretouched photo of RoZone specimen after long-time ozone test.

What Its High Ozone Resistance Means to You

Q: What is ozone?

A: Ozone is activated oxygen, a gas resulting from corona discharge, a phenomenon in the distribution and generation of high voltage electricity.

Q: How does it affect cable insulation?

A: Ozone, an enemy of conventional rubber compounds, causes accelerated cracking and embrittlement of cable insulation. The result . . . early cable failure.

Q: What does RoZone's high resistance to ozone mean to you?

A: First and most important, it protects you against cable failure due to ozone cutting . . . assures you of long-time dependability of service. With the power and control cables amounting to as little as 1 or 2 per cent of total generating station investment, you cannot afford to risk shut down of facilities by sacrificing insulation quality.

Further, RoZone is a type of insulation which has behind it better than 75 years of dependable performance. By independent laboratory tests, it exceeds all industry specification requirements.

While ozone cutting is a natural hazard of high voltages, low voltage failure is often traced to ozone cutting because of adjacency to rotating equipment or high voltage lines. RoZone, therefore, is your best protection *regardless of voltage classification.*

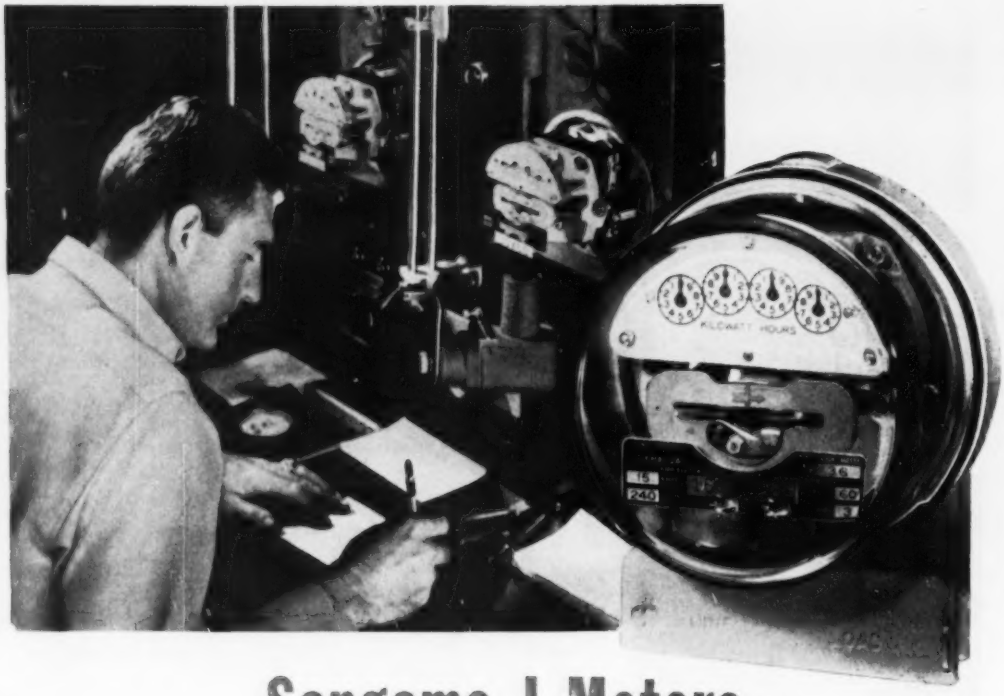
Approved by the country's leading consulting engineers for its well-balanced properties, RoZone merits your confidence for all high and low voltage work where dependable, long service life is paramount. We will be glad to send independent test data upon request.

It Costs Less to Buy the Best

RoZone is approved and accepted by leading utilities, industrials and consulting engineers.

ROME CABLE
Corporation
ROME · NEW YORK
and
TORRANCE · CALIFORNIA

ROME CABLE ROME, N.Y.



Sangamo J Meters

save costly man-hours

Sangamo J Meters are preferred by men who *work* with meters. Simple full-load and light-load adjustments that are readily accessible from the front . . . registers that are easy to read and easy to remove . . . are a few of the reasons why J Meters are favorites with meter testers everywhere! They're faster to test . . . easier to calibrate.

Sangamo J Meters are also preferred by cost-conscious utility managements because these meters save man-hours. That accurate factory calibration is sustained for many years is proved by the following actual service records: After an 8-year periodic test, one customer reports that all of a large group of J Meters maintained an accuracy between 98% and 102% at both light and full load. Another customer, also after an 8-year period, found 99.6% of all J Meters within the same accuracy band at full load, and 99.3% within this accuracy range at light load.

With J Meters, it is *field evaluation* which proves the saving of costly man-hours.

Only Measured Facts are Known Facts

SANGAMO
ELECTRIC COMPANY
SPRINGFIELD, ILLINOIS

Sangamo J Meters have proved their ability to meet today's requirements and tomorrow's anticipated loads with sustained accuracy, economy of maintenance and troublefree performance.

SM52-9

VISITING BUSINESSMEN examine work proudly displayed by youngsters in a Jackson grade school

Utility Men Learn ABC's of Schooling

Mississippi Power & Light executives inspect their old classrooms in returning previous visit by teachers

Visits by elementary and high school youngsters and their teachers to leading businesses in their geographic area have become a familiar part of the pattern of American education. But, when the businessmen reverse the procedure and come to the schools—that's really News with a capital N.

That's exactly what 100 business executives in Jackson, Mississippi, did recently, during that city's first Education-Business Day.

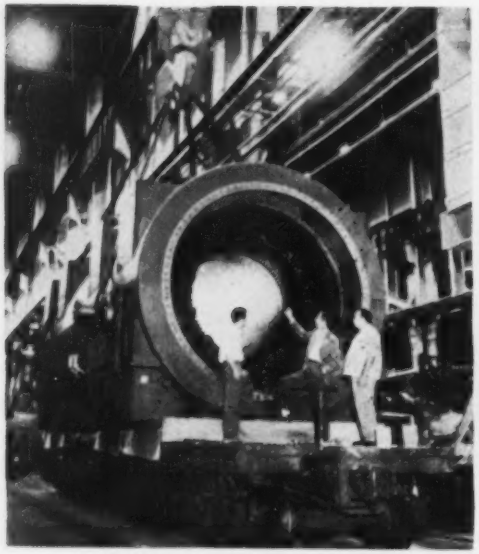
The "inspectors," including several from Mississippi Power & Light Co, took part in classroom sessions, chatted with students and teachers, toured buildings and grounds, and ate in the schools' cafeterias.

And they loved it. School and Chamber of Commerce officials who had been dubious about the reception the program would get were gratified when practically every person invited turned up and showed unusual interest. With principals acting as ushers, they took particular note of the conveniences and innovations in the new schools, especially the excellent acoustics and room coloration.

Return Visit . . . The action by the businessmen was a reciprocal gesture for Business-Education Day, held the previous week, during which Jackson school officials toured the city's business facilities. Playing a leading part in these festivities was Mississippi Power & Light, which played host to about 50 Hinds County school people.

MP&L executives who arranged the visits feel exchange of ideas which resulted from the E-B and B-E Days has done much to heighten community spirit and bring about a better general understanding of Jackson's schools and businesses.

DURING EARLIER visit by teachers to Mississippi Power & Light Co, J. D. Cruthird explained what goes on in an electric meter—how it is maintained, checked for accuracy, etc



1 STARTING POINT for trip of 200-ton stator to Con Edison plant is GE's Schenectady shops. Stator was hauled by rail to Jersey City

2 FROM LAND TO SEA is next stage in journey. Marine derrick lists to one side as it transfers stator to barge at Jersey City dock

4 NEXT STOP is the 42nd St dock on the east side of Manhattan. Stator is lowered on the trailer-truck for haul over city streets

5 DIFFICULT TURN lies ahead for the 42-wheeled tractor-trailer which measured more than 80 ft in length. Trek through city

The Big Haul—from GE to Con Edison

This month General Electric Co delivered a 200-ton stator to Consolidated Edison Co of New York that made transportation history.

It took two railroads, a specially built flat car, one of the word's largest marine derricks, a special barge, two tugboats, and a firm of heavy hauling experts to move the massive stator from GE's turbine shops at Schenectady to Con Edison's East River Plant in New York.

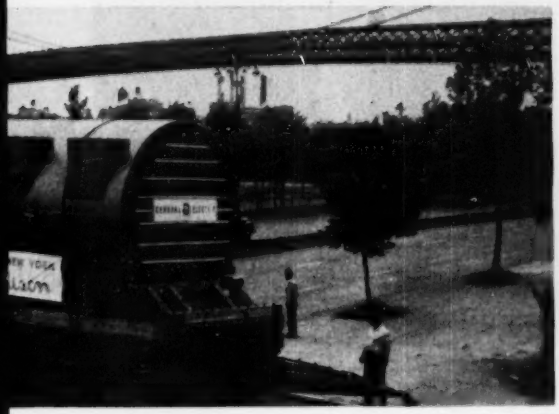
The actual hauling job was accomplished in three days. GE transportation specialists spent two years working out details of moving the stator, fabricated in 12 months.

Every step of the way had to be measured carefully and detours arranged so the unit could go through tunnels, passenger stations, and around corners. A direct route would have covered 160 miles but the stator, measuring 30 ft in length, 12½ ft in width, and 17 ft in height, had to be taken for a 300-mile ride to make sure it would arrive intact.

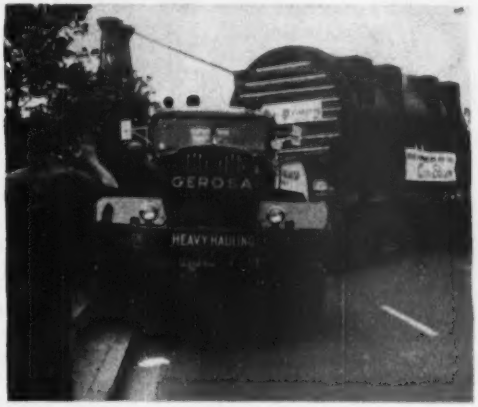
The trek began on a Tuesday morning at Schenectady. The stator was carted over tracks of two railroads to Jersey City. Thursday morning the stator was hoisted by the Monarch, largest floating derrick in the United States, from the flatcar to a barge.

The trip around the southern tip of Manhattan Island took two hours. Then the stator was transferred to a heavily reinforced trailor-truck at an East Side pier.

3 PUSH-PULL TACTICS are used to move barge and its cargo around end of Manhattan Island. One tug pulls and another pushes. Stern of the pushing tug can be seen at rear end of marine derrick, "Monarch." The derrick and barge were lashed together



streets began at dawn over a special route laid out by New York's Board of Transportation. Trailer and stator had weight of 270 tons



6 EXPERT JOCKEYING was needed before tractor-trailer completed turn on to East River Drive. Maneuvering took half hour

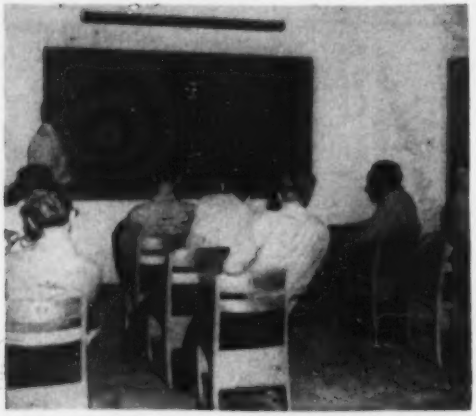
Two years of planning were needed to solve delivery problems of a stator built in 11 months

The Board of Transportation worked out a special route through the city's streets for the tractor-trailer. The hauling company, handling the biggest load in its history carried out a special "dry run" to make sure everything would go all right. Guide lines were painted in the streets to make the job easier.

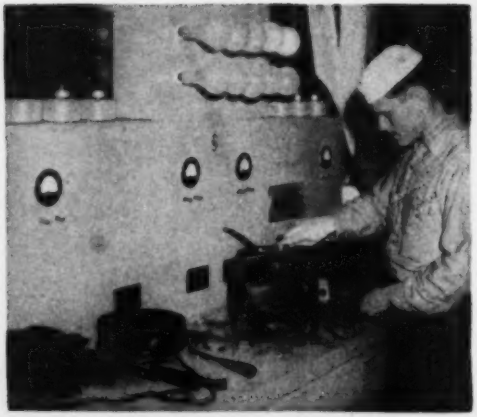
Believed to be the heaviest load ever taken over city streets, the stator was moved to Con Edison's plant in the early morning hours on Friday when the streets were almost deserted.

The unit is part of a 175,000-kw generator Consolidated Edison is installing at the East River Plant in Manhattan.

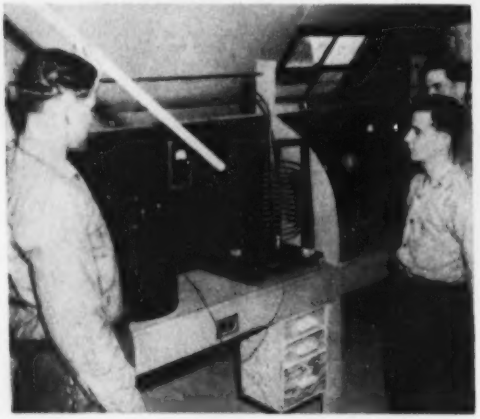
7 JOURNEY'S END is reached as truck turns into East River Plant. Stator just about cleared overhead obstacles inside entrance



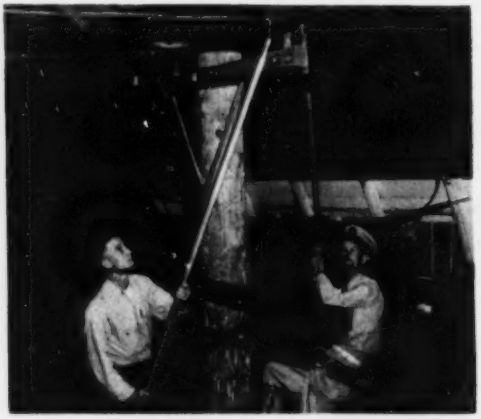
DIAGRAMS of basic transformer connections are developed and explained to a group of students by Instructor E. J. Mira, CEPC



TROUBLE SHOOTING of motors is an important part of the training program. Students check motors to find out why they don't work



ELECTRICAL PRINCIPLES are demonstrated in the Basic Electricity Laboratory. Students spend two weeks learning electrical theory



DEMONSTRATING use of mechanical hand and clamp are J. D. McCotter, leading chief, CE Schools, and R. N. McIntosh, instructor

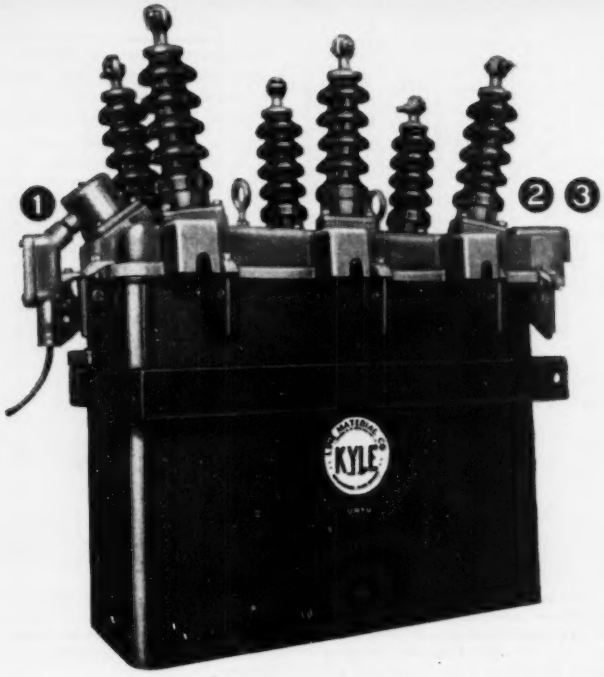
Navy Makes Its Own Electricians' Mates

It takes the Navy 13 weeks to turn a seaman apprentice fresh out of "boot" camp into a construction electrician's mate. The transformation takes place at the U. S. Naval Construction Battalion Center at Port Hueneme, Calif.

Most of the men coming into the "Seabees" have little or no construction experience. The first four weeks of the apprentice training course at the Construction Electrician's Mate School are devoted to mathematics and electrical theory.

The remainder of the course consists of the practical side of electrical work. Instruction is given in interior wiring; setting, climbing, and rigging of poles; stringing wire; hanging transformers; motor connections; trouble shooting; emergency power and generator operations; and operation and maintenance of communication switchboards.

DIPLOMA is presented to John L. Harvey by Lt. J. F. Stapelfeld for successful completion of 13-week apprentice training course



L-M's Kyle Type 3H Recloser Provides Automatic 3-Phase Protection

With three units in one tank, linkage tolerances can be controlled more closely, insuring more accurate and dependable 3-phase operation of the recloser.

The Kyle Type 3H 3-phase recloser provides individual reclosing and resetting on each phase for temporary faults. In case of permanent fault on any one phase, the recloser locks out *all three phases simultaneously.*

The Kyle 3H Recloser can be coordinated with sectionalizers or branch line fuses to isolate permanent faults to small sections of the system. Because all three units are in one tank, there is no external linkage; and greater operating accuracy and dependability are assured.

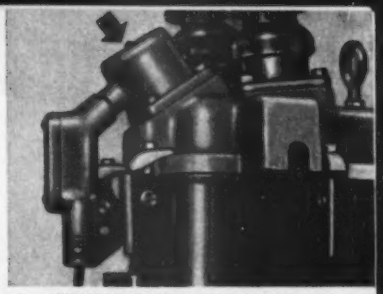
Positive toggle action; fast opening and closing do not depend on gravity. The Kyle hydraulic mechanism has proved itself over years of service to be dependable and trouble free.

The Kyle 3H can be applied on systems up to 15 kv, with nominal load ratings from 5 to 50 amperes and minimum trip currents from 10 to 100 amperes. Coils are easily changed right in the field. Interrupting ratings from 150 to 1200 amperes. Trip-free operating handle and all other Kyle safety features. Plated Universal bushing terminals for copper or aluminum. Available with the accessories shown at the right.

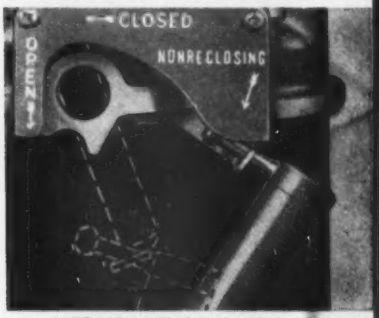
Get the Whole Story of Automatic Protection

Ask the L-M Field Engineer for a copy of Bulletin CR-1, or write Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

Like all Kyle reclosers, the Type 3H is filled with ORTO®, L-M's oxidation-resistant transformer oil.

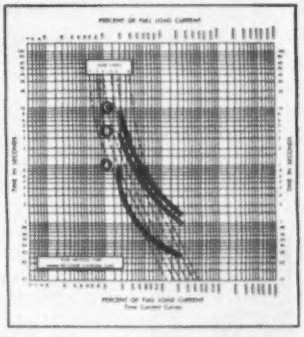


1 SHUNT TRIP COIL: an optional accessory that permits tripping the recloser from a distant point so it will not reclose. Or for ground fault-tripping with relay or other control equipment, the coil locks out the recloser in one fast operation. Must be built in at the factory.



2 KYLE NON-RECLOSING FEATURE: when control lever is down, this accessory prevents automatic reclosing, providing fast lockout on the first operation, for greater safety for men and equipment during hot line work. Available on all Kyle reclosers.

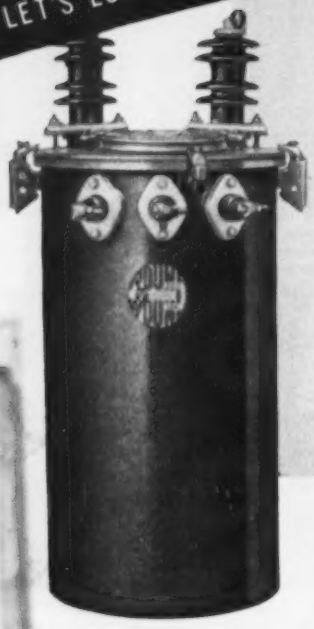
3 AUXILIARY SWITCH: an SPDT switch that may be attached to a Kyle 3H recloser. It may be used either to operate a remote indicator light to show when the recloser is open and closed; or as a limit switch to cut off current from the shunt trip coil after it has operated.



Kyle Reclosers offer the widest choice of time-current curves and sequences. You can select from Curve A, fast; B, retarded; C, extra-retarded. Choice of seven sequence combinations; sequences quickly changed right in the field.

LINE MATERIAL
Kyle® Reclosers

LET'S LOOK AT THE FACTS



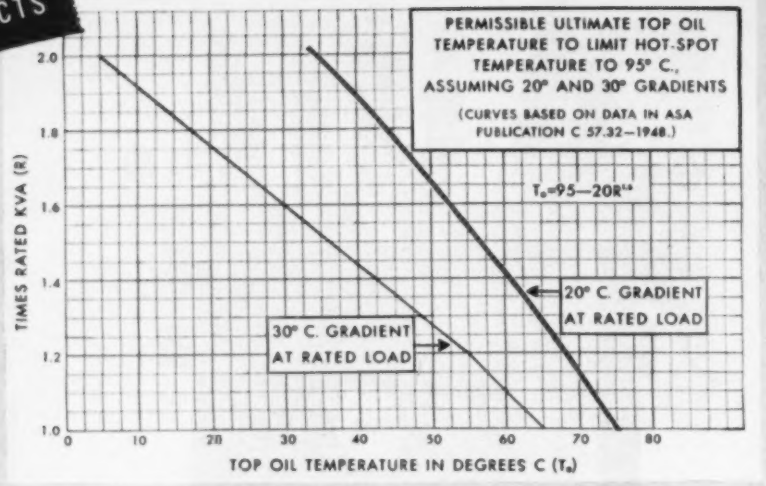


FIGURE 1—The colored line represents the conservative performance typical of a core-type transformer with highly efficient cooling such as the L-M Round-Wound, while the black curve represents the loading permissible with a transformer with less efficient cooling. These are ultimate oil temperatures. Because of efficient dissipation of heat from the coils to the oil, the oil reaches its ultimate temperature more rapidly in L-M Round-Wounds than in some other styles of construction.

How L-M Round-Wound Design Permits Heavier Loading or Longer Transformer Life

Round coils wound directly onto a wound core provide exceptional cooling that keeps copper and hot-spot temperatures relatively low even under high short-time overloads.

by **ROBERT P. THOMPSON,**
Assistant Chief Engineer,
Transformer Division,
Line Material Company

Greater transformer utilization through heavier loading offers substantial savings on almost any power system. Therefore the subject of transformer loading is receiving exceptional attention, both from utility companies and from the manufacturers.

Overload capacity of any individual transformer depends upon such factors as ambient temperatures, previous condition of loading, duration of the overload, and the sacrifice in transformer life that the user is willing to make.

But the principal factor is the transformer itself. Since overload capacity is limited by hot-spot temperature rise during the overload period, this capacity is largely determined by the design of the coils and the efficiency with which heat can be dissipated to the oil.

Obviously a core-type transformer, which has greater coil surface exposure, offers better overload capacity than shell types, in which coil surfaces are blanketed by core steel.

Round coils offer greater overload capacity than rectangular coil types, because coils present more unobstructed surface to cooling oil.

The Round-Wound transformer combines the advantages of the core-type transformer with the rapid heat dissipation of unobstructed round coil surfaces—and offers, in addition, the advantages of the cruciform-cross-section core, which provides natural oil passages for cooling the inside of the coils. Thus in the Round-Wound transformer, heat is dissipated *more rapidly* and more uniformly. For this reason the Round-Wound design provides higher short-time overload capacity, or a longer life with the same overload (Figure 3).

Get Details on L-M Round-Wound Transformers

Ask the L-M Field Engineer, or write Mr. Thompson at the Transformer Division, Line Material Company, Zanesville, Ohio (a McGraw Electric Company Division).

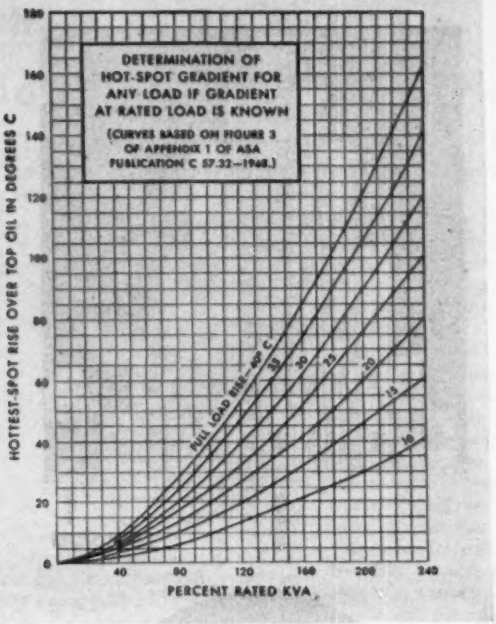


FIGURE 2—Here is presented a method of determining the hot-spot gradient for any load, if the gradient at rated load is known. It is to be noted that the higher the gradient at rated load, the more rapid is the rate of increase in the gradient with overload. The L-M Round-Wound transformer with a lower hot-spot gradient at rated load has a greater capacity for overload before damaging temperatures are reached.

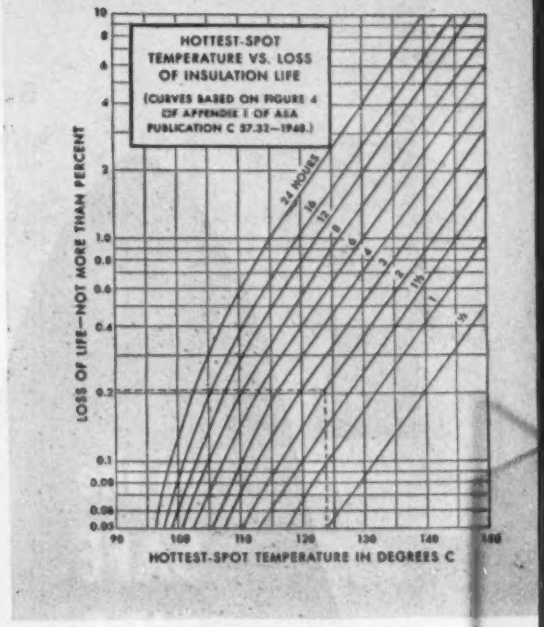


FIGURE 3—The primary factors in the deterioration of cellulosic insulation are time and temperature. Here is a method for approximating the loss of insulation life due to these two factors. Obviously an L-M Round-Wound transformer with its appreciably lower hot-spot temperatures during overloads will reduce the possible insulation damage and increase the overall life.

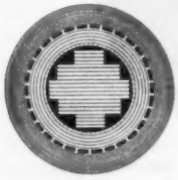


FIGURE 5—Cruciform cross section of the wound core provides oil passages between core and coils. In addition spacers between windings and between layers in larger sizes provide additional oil circulation, giving exceptionally good cooling for the entire unit.

Some of the Outstanding Characteristics of L-M Round-Wound Transformers

High Short-Time Overload Capacity

Better Regulation at all power factors

High Impulse Level, with ample creepage distances and generous insulation

High Short-Circuit Strength, because round coils have less tendency to distort

Low Exciting Current, because the core is not cut or disturbed after annealing

Better Loss Ratios with lower total losses

Filled with ORTO®, L-M's oxidation-resistant transformer oil, inhibited for longer life.

89

"Round-Wound" is a Line Material Co. trademark.

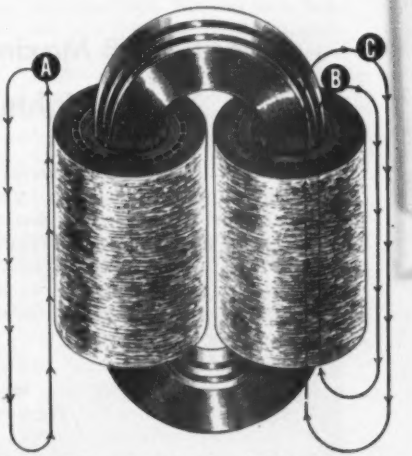
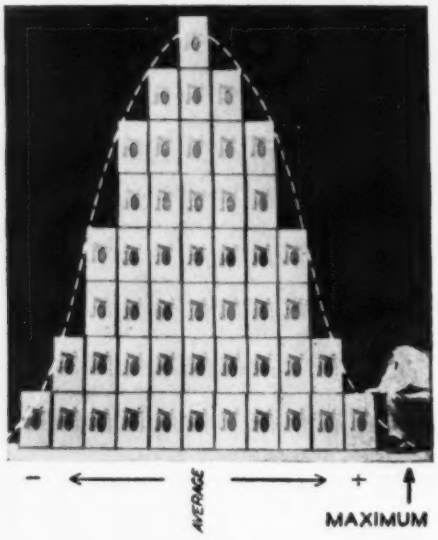


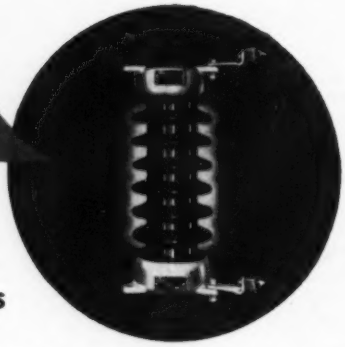
FIGURE 4—Diagrammatic presentation of the Round-Wound core-coil assembly. The core is wound of continuous strip of oriented silicon steel of various widths to give a core of cruciform cross section. Core is not unwound or cut, because coils are wound directly onto the completed, annealed core. Coils surround a maximum of the core circuit. They present a relatively large area to cooling oil.

LINE MATERIAL Transformers

Complete Coordinated Equipment for Distribution Today



Be on the SAFE SIDE



. . . specify O-B Maximum-Rated Thorex Lightning Arresters

Natural variations are inherent in any mass-produced product--including lightning arresters. How shall we recognize these variations in such an important protective device? To illustrate the problem, we have stacked 48 O-B Thorex arresters to represent the normal distribution curve of their IR discharge protective performance.

Only 16 ⅔ per cent fall into the central "average" column. Twenty of these arresters, or 42 per cent, are on the plus side of average not as good as average protective-wise. Your chances are equal of getting a below-average unit versus an above-average unit. 'Way out on the plus end is an arrester--the poorest that O-B factory inspection will pass. Yet this is the arrester O-B lists in its cataloged protective characteristics--the MAXIMUM unit. We wouldn't bring the matter up if we were not proud of the tall, narrow distribution curve of O-B Thorex performance, indicating close tolerance resulting from precise manufacturing control; and making the *poorest* Thorex arrester still a new high standard. The remaining Thorex arresters are as good, and in practically all cases better, than O-B MAXIMUM listings state.

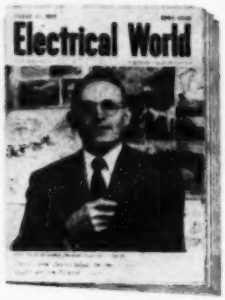
If you want to be on the safe side in lightning arrester specifications--if it's definite protection you're buying--you get this with a bargain thrown in when you install O-B Thorex lightning arresters.

Ohio Brass

MANSFIELD OHIO, U.S.A.

John Dierdorff Heads Nelpa

Association's top officer is a vice president of Pacific P&L. Trimble and Satterstrom are elected vice presidents



(Cover Story)

A former newspaper man and college endowment fund raiser, and current vice president of Pacific Power & Light Co is the new president of the Northwest Electric Light & Power Association. He is John Dierdorff.

The newly elected president succeeds A. S. Cummins, president of California Oregon Power Co. Other officers elected were A. W. Trimble, president of Mountain States Power Co, first vice president; and R. C. Satterstrom, industrial development engineer, Montana Power Co, second vice president.

Native Oregonian . . . A native of Oregon, Dierdorff graduated from the University of Oregon in 1922 with a BA in journalism. After a year of newspaper work in Portland, he joined the publicity staff of Tamblyn & Brown, New York. He remained for ten years, specializing in college endowment fund raising campaigns.

In 1933 he went to work for Pacific P&L and its affiliates, Northwestern Electric Co and Portland Gas & Coke Co. He became advertising supervisor for the three companies in 1938 and served in that capacity until 1947 when Northwestern Electric was merged with Pacific P&L. At that time he was elected a vice president of the utility in charge of advertising and publicity and is now a vice president and director.

Bright Outlook . . . Despite industry problems the Pacific P&L official is optimistic about the future of vigorous electric utility companies. His optimism is backed up by the $75-million expansion program the Northwest utility launched shortly after World War II.

Pacific P&L is now completing the 108,000-kw Yale hydroelectric project on Lewis River in southwest Washington. It was against a background of clippings on this project that Dierdorff posed for the cover picture.

In addition, the utility has just filed applications for preliminary Federal Power Commission permits to investigate two more sites upstream from the Yale project with a potential additional capacity of 85,000 kw and possible ultimate development to 500,000 kw.

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R. H. Morse III has been appointed general manager of Fairbanks, Morse & Co's Beloit (Wis.) Works. Morse succeeds **Orren S. Leslie,** who has been named manager of manufacturing and has been transferred to the firm's headquarters in Chicago. The newly appointed general manager, who started with the company at Beloit in 1946, will direct all phases of operation there. Leslie came to Fairbanks as general manager of the Beloit Works in 1951.

W. J. ROSE

American G&E Appoints Rose a Vice President

W. J. Rose has been made vice president of American Gas & Electric Co. Rose will continue as secretary of the utility, a post he has filled since 1949.

Rose, who started with American G&E in 1938, will also retain the positions of vice president, secretary, and director with American Gas & Electric Service Corp, a subsidiary of American G&E. In recent years Rose has been responsible for the financing operations of the American G&E system, including its expansion program.

Prior to joining American G&E, he was with Stone & Webster Securities Corp and Stone & Webster Service Corp.

R. B. STEINMETZ L. R. LOVE D. E. ALLEN

Anaconda Wire Reveals Promotions

Anaconda Wire & Cable Co has elected R. B. Steinmetz vice president in charge of manufacturing operations and L. R. Love vice president in charge of sales. The company also named D. E. Allen as general sales manager to succeed Love. Steinmetz formerly was general manager of mills.

DALE H. SWANSON

Dale H. Swanson Is a VP of Asplundh Tree Expert

Dale H. Swanson, who recently acquired an interest in Asplundh Tree Expert Co, Jenkintown, Pa., will serve the firm as vice president in charge of sales and as a director. He formerly was vice president of marketing and sales for Line Material Co.

Swanson joined Line Material in 1926 as a field engineer in the Philadelphia area. In 1936 he was promoted to manager of eastern sales with headquarters at East Stroudsburg, Pa. While working in this sales office, he also served at the same time as vice president of the company's subsidiary, Line Material Co of Pennsylvania, now known as LtM's Pennsylvania Plant.

Swanson has directed company-wide sales activities since 1944 when he went to the general offices in Milwaukee to fill the post of vice president of sales. The marketing department was created in 1950 and placed under his supervision.

A native of Iowa, Swanson obtained his early experience in the electrical operating and construction field with Citizens Gas & Electric Co, Waterloo, Iowa. After graduating from Iowa State College in 1921, he joined the engineering staff of Philadelphia Suburban Gas & Electric Co, Phoenixville, Pa. In 1923 he became head of that company's engineering department at Wyncote, Pa.

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Harold W. Whiting has been appointed assistant to the executive engineer in the Buffalo (N. Y.) plant of Worthington Corp, Harrison, N. J. The company also made **W. A. Scheerer** chief engineer in the Compressor Division; **W. J. Blessing,** consulting engineer; and **William M. Kauffmann,** chief engineer, Engine Division.

Nielsen Is Made Director of Reclamation's Region III

The Bureau of Reclamation's Region III will have a new director on Aug. 31 when E. C. Nielsen succeeds E. A. Moritz. Moritz is retiring after serving the reclamation program since 1905.

Nielsen, who will be located at regional headquarters in Boulder City, Nev., formerly was assistant director. He will be replaced by Wade H. Taylor, regional power manager.

The new director is a graduate of the State University of Iowa and has been assistant regional director since December, 1950. He started his professional career with private companies in 1926 and joined the bureau as assistant engineer at Denver in 1934. In 1936, he was promoted to associate engineer and in 1938, was appointed as an engineer of the bureau at Salt Lake City. Nielsen returned to Denver in 1942, and three years later was named regional planning engineer for Region III.

Taylor, who attended Purdue University and the University of Colorado, joined the bureau in 1935 as a junior engineer in the chief engineer's office in Denver. Early in 1945 he went to Boulder City as assistant regional power manager and was promoted to regional power manager in 1951.

Moritz has been regional director at Boulder City since 1943.

OBITUARY

Albert B. Paterson

Albert B. Paterson, 69, board chairman and former president of New Orleans Public Service, Inc, died Aug. 6 at New Orleans.

Paterson started his utility career in 1905 when he joined the Meridian (Miss.) Light & Railway Co, where he remained 12 years as vice president and general manager. When he went to New Orleans in 1917 he became associated with the bond department of Henry L. Doherty & Co. Later he worked for a traction property development firm and the old New Orleans Railway & Light Co.

Beginning his career with New Orleans PS in 1923, he served as general manager, vice president, and from 1930 to May, 1951, as president. At that time he was elected chairman of the board. He also was a director of Middle South Utilities.

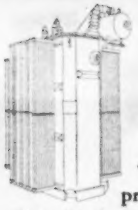
ALBERT B. PATERSON

R. B. Mildon, 74, retired vice president of Westinghouse Electric Corp, died at New York Aug. 4. Mildon, who had been associated with Westinghouse interests for 33 years, was named general manager in charge of the stoker department in 1932. Two years later he was elected a vice president in charge of all steam activities and in 1938 took over management of E. Pittsburgh Works, retiring in 1939.

Charles Carl Carr, who retired in 1949 as director of public relations and advertising for Aluminum Co of America, died July 29 at St. Petersburg, Fla. Carr started his career with Alcoa in 1934 as advertising manager and was made director in 1944.

William J. Henderson, 77, former utility executive, died at Montreal Aug. 1. In the early part of the century he had served as treasurer of Alabama Traction, Light & Power Co. Later he was named vice president of Southeastern Power & Light Co and when this company amalgamated with Commonwealth & Southern Corp, he returned to private business in his native Canada.

Fred C. Hanker, 71, retired Westinghouse Electric Corp engineer, died July 26 at Stanford, Calif. Hanker, with Westinghouse since 1903, was manager of central station engineering for the company at East Pittsburgh, Pa., prior to his retirement in 1935.



power for an oil-dependent economy

The wheels of progress in America literally depend on petroleum products—like those of The Texas Company—*Texaco*—(Marfak—Regal Oil [R & O]—Ursa Oil, etc.)—to keep them turning. A steady flow of these vital products from the refineries depends, in turn, on a steady flow of electricity as the source of power for production.

At the West Tulsa Works of The Texas Company, Wagner Transformers are used on the primary power supply and at other locations in this plant. They perform the task of dependably feeding electric power at the right voltage for use in this plant.

Wherever electric power is used, in industry, commerce, city and farm—Wagner Transformers can be found efficiently and dependably handling their never-ending job of supplying proper voltages for every purpose.

Wagner engineers are qualified to specify the correct transformer for *your* requirements. Consult the nearest of our 31 branch offices, or write us.

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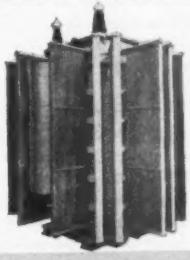


Wagner Electric Corporation
EST. 1891

ELECTRIC MOTORS • TRANSFORMERS
INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

WT51-6

Contest With a Kicker

Employees of Detroit Edison engage in letter writing contest telling "Why I think companies like my own, rather than the federal government, should provide our nation's electric service." Here are the details

1. Coordinator Carlton A. Stewart

A member of Detroit Edison's personnel planning department, he served as secretary of six-member contest committee. It consisted of personnel from various departments of company. A professional contest administration firm in Chicago handled processing of mail and prejudging of letters. A panel of judges, consisting of three prominent Detroit citizens: a newspaperman, an educator, and a business man, made final selection of top letters from among those submitted by the Chicago firm.

Detroit Edison Co's recent employee letter writing contest was designed to encourage and give an opportunity to employees to acquaint themselves with the federal government's expansion in the electric utility field.

"In My Opinion" was the title given to the contest. The subject on which letters were written was "Why I think companies like my own, rather than the federal government, should provide our nation's electric service."

The contest entailed a great deal of detail work. There were rules to be set up, publicity and promotion to be arranged, entry blanks to be mailed, and the numerous other steps involved in administering such a contest to be taken care of.

The program was highly successful. Participation was high. A follow-up survey indicated that the contest caused considerable interest among the 12,300 employees, over and above the 1,424 entries received. There was much discussion and reading about the problem.

Objectives . . . Other objectives were to create in employees:

1. A greater sense of personal interest in the maintenance of a business-managed electric light and power industry.

2. A greater realization of the dangers to our free enterprise, competitive American system involved in the continued expansion of the federal government.

3. A better understanding of how and why the federal government is expanding in the field of business and industry.

4. The experience of participating in a management problem and of looking at current events from the point of view of business organization.

Responsibility of developing and administering the contest was assigned to a six-man committee, consisting of people from various company groups (Public Information, Employee Relations, Sales, and Overhead Lines). One member of the committee served practically fulltime as project engineer for the contest. The committee, with staff aid by other departments, selected the contest title and subject, established a six-month work schedule for the project, wrote the rules, selected the awards, and arranged with people outside the company for processing the return mail and for judging the winning letters.

4. An Employee Working On His Entry

Neil Warren of Detroit Edison's construction engineering department and his wife, Helen, work on his entry. He used all the material available. Especially a new booklet, "ABC's of the Public Power Problem," prepared by the company. This booklet makes a straight-forward presentation of the questions and issues raised by government expansion in the electric utility industry. Neil was one of the 98 winners. For the top winners and their prizes see Picture 6 and caption on following page.

2. Contest Instructions and Material

Basic source material for the contest was the booklet, "ABC's of the Public Power Problem." It was included with entry blank, rules, and other material that made up the mailing to employees' homes. Additional idea booklets were available in information racks located in various company buildings. Prepared packets of four idea booklets, selected by Public Information Division, were distributed to all company places not covered by the rack service.

3. 12,300 Employees Get Entry Blanks

A group of Edison girls prepare the contest mailing. Twelve thousand three hundred employees, retirees, and employees in military service received entry blanks and other contest information. All were eligible, except for administrative employees and those involved in arrangements for the contest. Letters were received from retired employees as far away as Belgium and Scotland and from employees on leave with the Armed Services and serving at overseas posts.

5. Promotion Played a Big Part

Posters were displayed on bulletin boards each week. Payroll inserts were sent to the home. Displays of the major prizes were circulated among the plants and office buildings. Articles appeared in issues of the company magazine and supervisor newsletter, and an Admatic display with ten changing film slides was used in several work locations in Detroit. Intra-department interest was stimulated by letters from department heads to employees asking them to state their views and ideas.

6. 98 Winners "In My Opinion" Contest

A reception was held for the 98 winners at which Pres Walker L. Cisler presented a scroll to each. Grand prizes went to Fred W. Braga, left, accountant, first prize of a range, refrigerator, and freezer; Elton J. Hendershot, iron worker, third prize of a sewing machine, vacuum cleaner, and mobile fan; and Edwin G. McKay, financial analyst, second prize of an ironer, dryer, and automatic washer. Other prizes included roasters, blankets, and household appliances.

MEETINGS

Gas Turbine Talks Slated . . .

. . . for the fall meeting of the American Society of Mechanical Engineers, to be held in Chicago Sept. 7-11

When the American Society of Mechanical Engineers holds its fall meeting, sessions will be held on gas turbines, nuclear energy, and controls on fuel firing for steam generator installations. The ASME parley is slated for September 7-11 at the Hotel Sheraton, Chicago.

Central Station Use . . . At the gas turbine progress report session Lee Schneitter, Ebasco Services, Inc, will discuss the central station applications. Specialized industrial applications of the gas turbine will be analyzed by L. N. Rowley and B. G. A. Skrotski, both of McGraw-Hill Publishing Co. Development of gas turbine controls will be reviewed by G. Forrest Drake, Woodward Governor Co.

Guest speaker at the gas turbine power luncheon planned for Sept. 9 will be Claude Seippel, director of research, Brown Boveri Co, Baden, Switzerland. His topic will be "Gas Turbines in Our Century."

Industrial applications of nuclear energy will be dealt with by Alfonso Tammaro, Atomic Energy Commission, at the nuclear energy symposium.

Fuel Firing Controls . . . Slated for discussion at the fuels session are boiler controls for multiple fuel firing in modern steam generator installations. The subject will be handled by Alfred C. Wenzel, Republic Flow Meters Co. At this session, a talk on the influence of low-quality coal on design and operation of pulverized-fuel-fired units will be given by Otto de Lorenzi, Combustion Engineering-Superheater, Inc.

Operating experiences with 1,250 gpm demineralizer water treatment plant will be discussed by Vincent B. Burgess, Philadelphia Electric Co, at a power session. The outdoor power station in south Texas will be the subject that H. G. Hiebeler, Houston Lighting & Power Co, will discuss.

ASME has announced that a special showing of the stage production "Adam to Atom," which is part of the celebration for the Centennial of Engineering, has been arranged for the society's members and their guests. The production will be shown at the Museum of Science and Industry.

Americans Will Attend U.P.A.D.I. Convention

Among the members of the American delegation to attend the New Orleans Convention of U.P.A.D.I. (Pan-American Federation of Engineering Societies) will be Titus G. LeClair, Commonwealth Edison Co; Ernest Pragst, International General Electric Co; Fred T. Agthe, Allis-Chalmers Manufacturing Co; Joseph Pope, Stone & Webster Engineering Co; and Fischer Black, editor, Electrical World.

Scheduled to be held Aug. 26-29 in the air-conditioned McAllister Auditorium of Tulane University, the parley will be attended by engineers in all fields from 20 Latin American countries, Canada, and the United States. They will participate in organizational and technical sessions.

Hosts for the convention will be the Engineers Joint Council and the Engineering Institute of Canada. LeClair is president of EJC.

CALENDAR

American Institute of Electrical Engineers
Pacific General Meeting, Hotel Westward Ho, Phoenix, Ariz., Aug. 19-22; Middle Eastern District Meeting, Commodore Perry Hotel, Toledo, Ohio, Oct. 28-30.

Institute of Radio Engineers
Joint Telemetering Conference with American Institute of Electrical Engineers, Lafayette Hotel, Long Beach, Calif., Aug. 26-27; Joint Computers Conference with AIEE, Park Sheraton Hotel, New York, Dec. 10-12.

Centennial of Engineering
Convocation, Chicago, Ill., Sept. 2-13.

Michigan Municipal Utilities Association
Annual Convention, Charlevoix Beach Hotel, Charlevoix, Mich., Sept. 4-5.

Maryland Utilities Association
Cavalier Hotel, Virginia Beach, Va., Sept. 5-6.

Rocky Mountain Electrical League
Fall Convention, Colorado Hotel, Glenwood Springs, Colo., Sept. 7-10.

American Standards Association
National Standardization Conference in conjunction with Centennial of Engineering, Museum of Science-Industry, Chicago, Ill., Sept. 8-10; 34th Annual Meeting, Waldorf-Astoria Hotel, New York, Nov. 19.

Edison Electric Institute
Area Development Institute, Yale University, New Haven, Conn., Sept. 8-10; Accident Prevention Committee, Sheraton Hotel, Rochester, N. Y., Sept. 15-16; Prime Movers Committee, Roosevelt Hotel, New Orleans, La., Oct. 6-7; AEIC joint meeting, Meter-Service Committees, Mayflower Hotel, Washington, D. C., Oct. 6-8; Electrical Equipment Committee, Roosevelt Hotel, New York, Oct. 13-14; Transmission - Distribution Committee, Hotel Adolphus, Dallas, Tex., Oct. 22-24.

American Society of Mechanical Engineers
Fall Meeting, Sheraton Hotel, Chicago, Ill., Sept. 7-11.

Illuminating Engineering Society
National Technical Conference, Edgewater Beach Hotel, Chicago, Ill., Sept. 8-12.

Instrument Society of America
7th National Instrument Conference-Exhibit, Cleveland Auditorium, Cleveland, Ohio, Sept. 8-12.

*__National Association of Corrosion Engineers__
Short Course on Corrosion in cooperation with Washington University, St. Louis, Mo., Sept. 8-12.

*__Pennsylvania Electric Association__
Annual Meeting, William Penn Hotel, Pittsburgh, Pa., Sept. 16-17; Fall Meeting, Electrical Equipment Committee, Irem Temple Country Club, Dallas, Pa., Oct. 2-3; Transmission - Distribution Committee, Penn-Alto Hotel, Altoona, Pa., Oct. 9-10; Fall Meeting, Systems Operation Committee, Hotel Roosevelt, Pittsburgh, Oct. 16-17; Industrial Committee, Bedford Springs Hotel, Bedford, Pa., Oct. 23; Fall Meeting, Meter Committee, Fort Stanwix Hotel, Johnstown, Pa., Oct. 23-24; Fall Meeting, Relay Committee, Robert Treat Hotel, Newark, N. J., Nov. 13-14.

Northwest Public Power Association
Accounting Section, Congress Hotel, Portland, Ore., Sept. 18-19.

Public Information Program
Annual Workship Conference, Edgewater Beach Hotel, Chicago, Ill., Sept. 18-19.

Southeastern Electric Exchange
Fall Meeting, Engineering-Operation Section, Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 25-26; Accounting Conference, Jung Hotel, New Orleans, La., Oct. 16-17; Sales Conference, Thomas Jefferson Hotel, Birmingham, Ala., Oct. 29-31.

Missouri Valley Electric Association
Accounting Conference, Hotel President, Kansas City, Mo., Sept. 29-30; Sales-Rural Conference, Hotel President, Kansas City, Mo., Oct. 8-10.

National Electronics Conference
8th Annual Conference, Sherman Hotel, Chicago, Ill., Sept. 29-30 and Oct. 1.

California Municipal Utilities Association
20th Annual Conference, U. S. Grant Hotel, San Diego, Sept. 30-Oct. 3.

University of Texas
Power Distribution Conference, Department of Electrical Engineering, Austin, Oct. 6-8.

Indiana Electric Association
Annual Convention, French Lick Springs Hotel, French Lick, Ind., Oct. 8-10.

National Farm Electrification Conference
Statler Hotel, Detroit, Mich., Oct. 20-21.

National Electrical Industries Show
69th Regiment Armory, New York, Oct. 21-24.

National Electrical Manufacturers Association
Annual Meeting, Haddon Hall Hotel, Atlantic City, N. J., Nov. 10-13.

*__Addition this week.__

AUTHOR EXPLAINS features of a modern electric range to a visitor to the utility's display. The power company sells no merchandise

RESTAURANT OPERATOR listens as the author explains operations of a fry kettle made available by the utility on a free trial basis

How a Massachusetts Utility Revived Commercial Cooking Sales

Starting from scratch, non-merchandising utility combines its promotion with dealer-manufacturer cooperation to add 1,500 kw during first year of operation

ARTHUR C. BRODEUR, JR., Commercial Cooking Representative, Western Massachusetts Electric Co, Springfield

Through World War II and for half a decade after, commercial cooking sales promotion was a dead duck, as far as the Western Massachusetts Electric Co was concerned. Then I was given the job of bringing it back to life. I brought to this task the handicap—or advantage?—of not knowing a single thing about commercial electric cooking or the food service business. I had to start from scratch, with everything to learn and nothing to unlearn.

I began the learning process by setting up an information file with materials gleaned from equipment makers to whom I had written. With the deluge of catalogs and bulletins I received, I started a cross index card locater system to enable me to find any information I needed.

Six Point Program . . . I received the green light on a six-point program I put together for a long-range cooking sales development. It included:

1. Formal announcement by the company of my appointment to equipment supply dealers located in or selling in our service area.

2. Sending "Food Service News" to 250 equipment dealers, architects, electricians, and restaurant and hotel operators.

3. Securing everything available on commercial cooking from Electrical Information Publications. Particularly helpful was "The Fact Book of Commercial Electric Kitchen Equipment," which gave me names of manufacturers from whom to request material for my information file.

4. Setting up a display of commercial cooking equipment in one company office.

5. Purchasing a fry kettle to be used as a free trial demonstrator.

6. Sponsoring some kind of commercial cooking show or program for food service operators in our service area.

At about the same time, my plans were given a boost when the United Illuminating Co sponsored a five-day school at the Restaurant Institute of Connecticut in New Haven. This was my introduction to the food service business, and it has been lastingly helpful. While there, I made the acquaintance of many utility commercial cooking specialists from whom I learned much since.

My next step was to build up a working relationship with equipment suppliers. At first, most of them were rather skeptical. But since our company does not merchandise, they could not look on me as a competitor, and after several visits they began to accept me as their co-worker. After a dealer's confidence had been gained, he was usually willing to discuss par-

TWO PROSPECTS are given a special demonstration of a coffee maker at the company's "Electric Commercial Cooking Center"

ticular prospects, and to use our help.

Meanwhile, our sales manager had agreed to allocate a small room for display of electrical cooking equipment. A selected list of manufacturers and dealers agreed to display their wares in our "Electric Commercial Cooking Center." Included was a large super-range, large floor model fry kettles, a small oven, toaster, coffee makers, soup cooker, and a complete counter line, including griddle, fry kettle, griddle grill, food warmer, waffle baker and hot plate.

Plans Outlined . . . At a meeting with dealers, we discussed the company's commercial rates, operation and functions of the commercial cooking and service department, and the sales program for the coming year. Included in the latter were increased direct mailing of "Food Service News," distributing handout pieces through dealers, and purchasing a fry kettle for demonstration purposes. Local all-electric installations were reviewed, and an outline was drawn for a "Restaurant Round-Up" show to be presented in the new all-electric cafeteria of the Massachusetts Mutual Life Insurance Co. Our proposals were accepted with enthusiasm.

The "Restaurant Round-Up" show featured a tour of the Massachusetts Mutual Life Insurance Co building, and a live demonstration of short order cooking for the audience of 300 food service operators. Five mailings were later sent to those attending, inviting them to make a trial demonstration of the cooking equipment used.

Further meetings featured Willard Slagle, president of the Massachusetts Restaurant Association, who spoke on "Cutting Down Operating Costs"; Robert Conley of the OPS, who discussed government controls, and James Malaier, field consultant for "Modern Maid" food mixes.

Newspapers Cooperate . . . At the same time, newspapers were carrying material on commercial cooking progress, as did bulletins of the Restaurant Association and other organizations and a separate mailing covered an ultra-modern all-electric cafeteria in the nearby city of Hartford, Conn. All this publicity soon began to have an effect on our food service customers.

This growing interest was augmented by our most effective promotional venture—use of the 4.5-kv electric fry kettle on a trial basis. This is installed on a temporary basis by a licensed electrician at a flat fee of $10. Following installation, I demonstrate the mechanics and operation to the owner, chef or cooks, sometimes all.

During the first few months, we paid for 13 trial installations at a cost of $130, resulting in the sale of 18 fry kettles. The load was increased by 138 kilowatts. More significantly, however, this trial opened the door to more sales, and in some cases has led to conversion to all-electric operation.

Steady Progress . . . Our long-range program is going forward steadily, with an eye to the profitable market represented by a national electric cooking saturation of about 8 per cent. Several problems to be faced are the much higher initial cost of electric cooking equipment, inadequate existing wiring, and high wiring and installation costs.

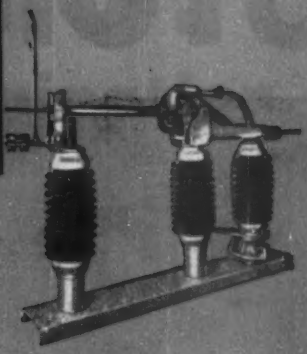
We also have had trouble with installation of equipment of wrong voltage. When a 220-volt unit was installed in a 208-volt area, it naturally took longer to preheat, and in some cases the proper operating temperature was not reached.

Unfavorable reaction resulted, but this was corrected generally by a letter to all equipment dealers serving our area. In addition, a self-addressed postcard was furnished dealers, with space for the customer's name and address, the manufacturer's name, model number, wattage, serial number, voltage and dealer completing the sale. This card has kept us posted, and has been of help to our service department.

I feel that we are just reaching the crossroads of this broad and profitable phase of our business. An annual report recently prepared for the management shows that we added about 700 kilowatts in this class of load for the Springfield division, and the system as a whole added about 1,500 kilowatts, with some of the larger installations bringing in two cents per kilowatthour. The management has been cheered by our progress, and has accepted several of my recommendations to improve the program in the future.

HERE IS KEARNEY EQUIPMENT....

Designed to
INCREASE PROFITS FOR POWER COMPANIES Through More Efficient Operation on Today's Heavily Loaded Lines



KEARNEY SHUNT CAPACITORS
Invaluable Device for Power Factor Correction and Voltage Improvement

These shunt capacitors correct many undesirable conditions on heavily loaded lines. They release feeder capacity permitting addition of more customers, and increase KW-hours for added revenue, and they release substation capacity in correcting the power factor. The voltage improvement eliminates light flicker and dimness and keeps the voltage within normal operating limits to prevent damage to motors.

Kearney Capacitors feature such advantages as:
(1) Protective Packaging, (2) Silicone Gaskets, (3) Askarel Dielectric Oil, (4) Hot Zinc Spray Tank.

For additional information, write for bulletin No. 21-1.

The Improved KEARNEY GROUP OPERATED, ROTATING INSULATOR TYPE, VERTICAL BREAK DISCONNECT SWITCH With Important Design Changes for Cooler, Maintenance-Free Operation

These features assure dependable performance under every variety of operating conditions:

1. Heavy leaf type beryllium copper spring contacts with silver overlay at both ends of blade.
2. Fully adjustable to compensate for any changes in switch mounting structure.
3. Positive current path to blade through blade contacts at both ends of switch. Hinge mechanism does not carry current.

Now available in ratings up to 115 KV. Write for more detailed information. Ask for bulletin No. 8-33.

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***KEARNEY** Gives a Little More for a Little Less Through Engineering*

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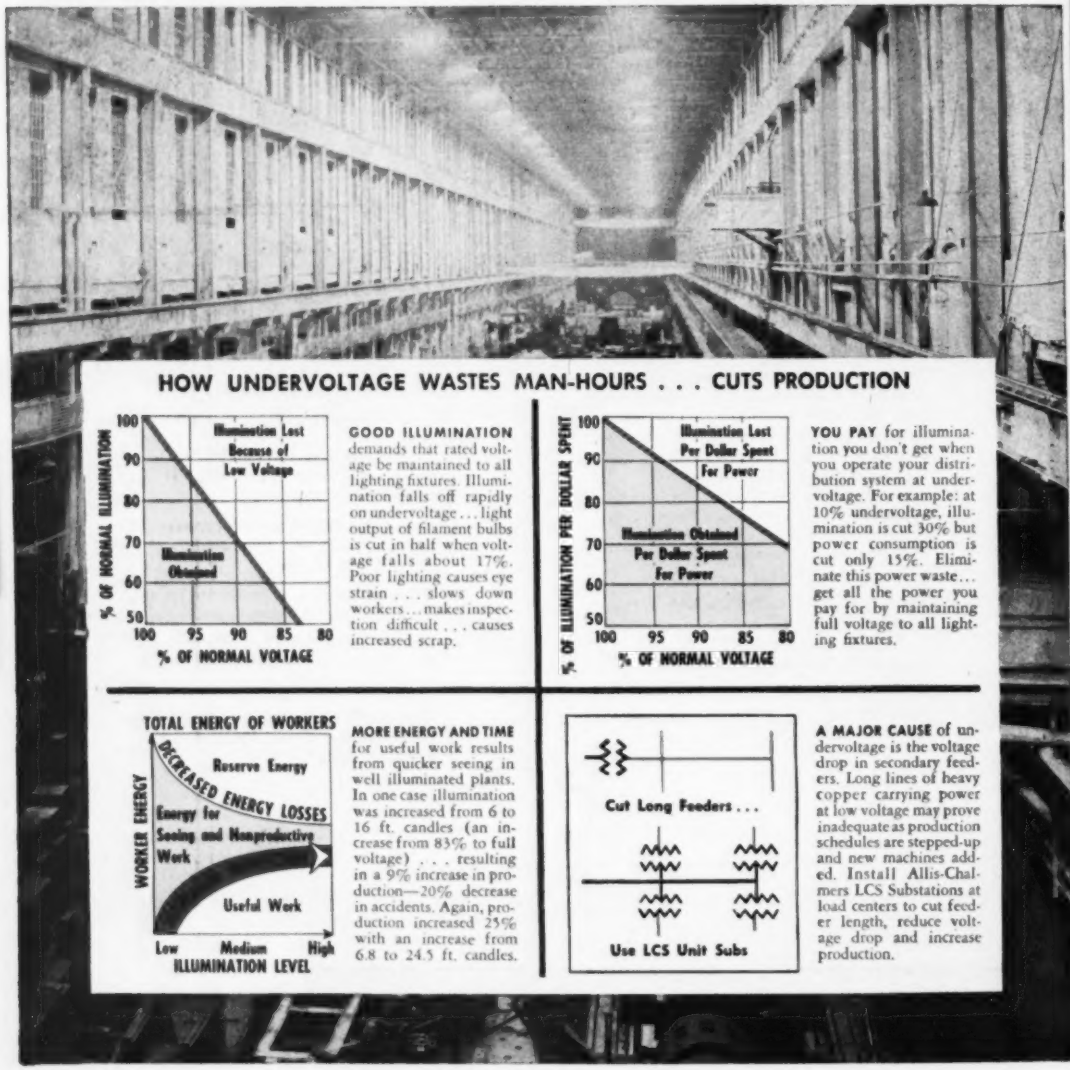
STOP Wasted



HOW UNDERVOLTAGE WASTES MAN-HOURS . . . CUTS PRODUCTION

GOOD ILLUMINATION demands that rated voltage be maintained to all lighting fixtures. Illumination falls off rapidly on undervoltage . . . light output of filament bulbs is cut in half when voltage falls about 17%. Poor lighting causes eye strain . . . slows down workers . . . makes inspection difficult . . . causes increased scrap.

YOU PAY for illumination you don't get when you operate your distribution system at undervoltage. For example: at 10% undervoltage, illumination is cut 30% but power consumption is cut only 15%. Eliminate this power waste . . . get all the power you pay for by maintaining full voltage to all lighting fixtures.

MORE ENERGY AND TIME for useful work results from quicker seeing in well illuminated plants. In one case illumination was increased from 6 to 16 ft. candles (an increase from 83% to full voltage) . . . resulting in a 9% increase in production—20% decrease in accidents. Again, production increased 25% with an increase from 6.8 to 24.5 ft. candles.

A MAJOR CAUSE of undervoltage is the voltage drop in secondary feeders. Long lines of heavy copper carrying power at low voltage may prove inadequate as production schedules are stepped-up and new machines added. Install Allis-Chalmers LCS Substations at load centers to cut feeder length, reduce voltage drop and increase production.

Unit Substations

Manhours!

By Improving Illumination

BOTH MACHINERY AND PERSONNEL gain efficiency when you install unit substations to correct undervoltage. That's because no worker can do his best *unless* his job is well lighted . . . no electrical equipment gives top performance *unless* it operates at proper voltage.

Filament bulbs, for instance, give 15% less than rated light when voltage falls only 5%. On undervoltage, fluorescent tubes and mercury lamps give less than rated light, are difficult to start, may flicker and go out. And when you operate at undervoltage, you are paying for power you're not using.

Eliminate power waste . . . manhour loss. Workers are more efficient, produce more work of better quality when illumination is adequate. Put *all* the power and manhours you're buying to work by maintaining proper voltage to all equipment. Install Allis-Chalmers LCS Unit Substations at load centers and eliminate long runs of expensive low voltage cable. Allis-Chalmers LCS Load Center Unit Substations are neat, compact, easy to install and provide protection to personnel.

You can count on the cooperation of experienced Allis-Chalmers substation engineers in working out your distribution problem. Get in touch with your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin. Ask for bulletins 11B6285A, 11B6325B, and 11B6895.

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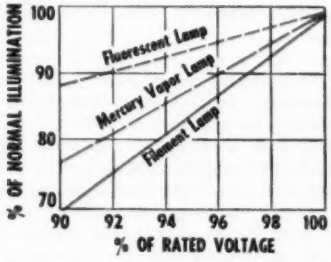
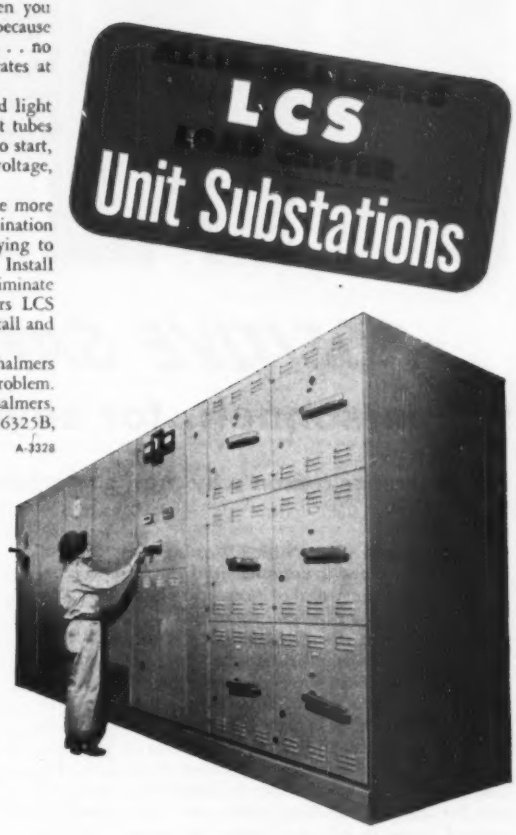
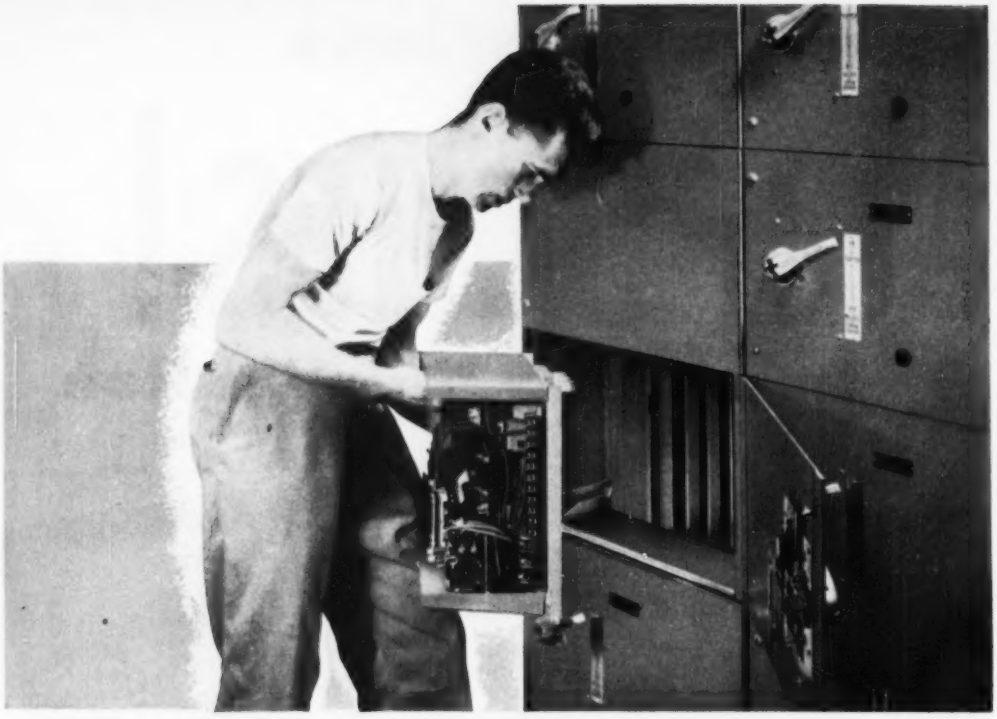


Undervoltage reduces the light output of filament, fluorescent and mercury vapor lamps. Although light output is least affected on fluorescent lamps, undervoltage makes them flicker, hard to start. Mercury lamps go out altogether at 10% undervoltage . . . require up to 20 minutes to regain full light output.



ALLIS-CHALMERS



POSITIVE SAFETY

for personnel...for equipment

Another reason why most control center buyers specify WESTINGHOUSE

Every time a man works with a Westinghouse Control Center he does so with complete freedom from danger. He knows that every design precaution has been taken to make his task a safe one.

He knows that when he tilts out a starter unit, it is completely disengaged from the power buses. He knows that when he removes a unit, the unit door remains on the structure to close off the hot buses. He knows that when he replaces the unit, the guide rails align the Magna-Grip® stab connectors so that engagement with the buses is positive every time. He knows that each starter unit is completely enclosed and has grid-type baffling which prevents spread of ionized gases to adjacent units. He knows that all current interrupting components have been tested at the Westinghouse High Power Laboratory to prove their unfailing performance.

Call your local Westinghouse office for the services of an application engineer. He will work with you to figure out the best combination of control center components and structures to handle your job. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-27024

YOU CAN BE SURE...IF IT'S
Westinghouse
CONTROL CENTERS

New WSB Has Less Power

Wage board's responsibilities and functions crimped by Congress. Harvard law professor, Archibald Cox, is chairman

Badly crippled by Congress, the third Wage Stabilization Board will limp along. Still in control are the industry, American Federation of Labor and Congress of Industrial Organization members of the old board, which Congress abolished because of its handling of the basic steel dispute. But there are new faces on the "public" side, including that of the chairman, Archibald Cox.

Cox, forty-year old Harvard law professor, has been co-chairman of WSB's Construction Industry Stabilization Commission, which got up a policy permitting wage increases of 15¢ an hour and welfare benefits of 7½¢ an hour in the construction industry this year.

ARCHIBALD COX

WSB's Duties Crimped . . . WSB's responsibilities and functions have been severely crimped by Congress. So have its funds, so there isn't much for the board to do. It can look forward, however, to future settlements it probably will have to act on in coal mining, copper, rubber and shipbuilding industries.

Here are the important changes that have taken place in the transition from WSB II to WSB III:

WSB can't involve itself in wage or other labor disputes. However, if requested, it may give advice on how its policies apply to a specific situation. For example, North American Aviation and the CIO Auto Workers have agreed to arbitrate their wage dispute with the understanding that the arbitrators will first make sure that their decision has WSB approval. So, when the panel requests, WSB can advise whether its proposed decision meets stabilization rules.

Certain Workers Exempted . . . Neither WSB nor the Salary Stabilization Board has any authority over the pay of farm workers, wages up to $1 an hour, or the compensation of most professional engineers, architects, and public accountants. They are decontrolled. Also decontrolled, with specific exceptions, are wages and salaries paid by small businesses employing eight or less.

The exceptions are:

1. Where the pay is determined on an industry, association or similar basis.
2. Building and construction industry.
3. Local and over-the-road trucking.
4. Tool and die and patternmaking shops.
5. Logging operations, sawmills, and planing mills.
6. All businesses in Alaska.
7. Automotive repair shops.
8. New plants expecting to employ more than eight.
9. Businesses (other than banks, building and loan associations and savings institutions) which derive more than 25% of their business income from dividends, interest, rents or royalties.

Other employers of eight or less are exempt from wage-salary controls until their employment reaches 16.

WSB no longer will issue new regulations and policies. This will be done by the Economic Stabilizer Roger L. Putnam on recommendation of WSB. This will bring wage and price controls closer together under Putnam, whose office is ultimately responsible for both.

Enforcement of wage and salary controls has been consolidated in a single national enforcement commission in Putnam's office. Up to now, WSB and SSB have gone their own ways on enforcement.

Get Saturdays Off

Office employees of the Indianapolis Power & Light Co will not work on Saturdays, beginning Sept. 13. Practically all employees except those in the electric building have been on a five-day work week for years. However, the company's salesroom for sale of appliances will be open on Saturday mornings.

GE Lays Off 3,650

General Electric Co has announced that 2,650 workers in its transformer division in Pittsfield, Mass., were being laid off and that half of 2,000 others on vacation would be paid off on their return. The reason for the action, which affects half the workers in the plant is the continued strike of Allegheny Ludlum Steel Co in Pennsylvania. GE gets a vitally needed supply of silicon steel from the steel company.

LABOR BRIEFS

Michigan Wage Stabilization Board has approved wage increases totaling 14¢ per hour and a number of fringe benefits for hourly rated employees of Consumers Power Co, it was announced by M. S. Ryder, regional WSB chairman (EW, July 7, p 40). The approved wage adjustments were in line with recommendations of the Governor's special commission.

General Electric Co and International Union of Electric Workers, CIO, open contract talks, with union seeking 20¢ to 30¢ wage package.

For interesting booklet "What to do about Communism in Unions," write L. R. Boulware, vice president, General Electric Co, Schenectady, N. Y.

Central Hudson Gas & Electric Corp has just issued an employee booklet, "Working With Central Hudson." For copy write Ernest R. Acker, president, South Road, Poughkeepsie, N. Y.

FINANCIAL

Con Ed Rate Hike Protested

Large commercial and industrial users unite to fight PSC order allowing increases of $13 million a year

New York City's larger commercial establishments and industrial concerns have united to fight a recent electric rate order of the Public Service Commission. This order was put into effect on Aug. 4 by the Consolidated Edison Co of New York. The commercial customers will have to pay about $5 million more a year. Another $8 million annually, the PSC estimated, will come from larger industrial consumers.

At a protest meeting held on Aug. 7 by the combined public utilities committee of the Real Estate Board of New York and Midtown Realty Owners Association, it was noted an appeal must be filed within 30 days on the PSC ruling. The committee is headed by John Cahill. Several of the real estate lawyers who have been fighting the hike cautioned the group that chances of winning an appeal were slim as the rate case decision came after six years of hearings and litigation. They suggested that an entirely new rate case should be filed on the grounds that the new rate schedules were discriminatory.

Competing Plants . . . Abraham K. Kaufman, president of the Midtown ROA, suggested to the meeting that these users of electricity should erect their own power plants. He said that his group has been studying the advisability of maintaining plants to serve block-square areas.

Ralph Dudley, a former Edison employee and now a power engineer with several landlords as clients, warned that such plants would be "unattractive" because of high construction and labor costs. He urged that one large plant be set up to give Con Ed direct competition. He declared that the possibility of competition might make them a little more "cooperative" in keeping low rates.

Another meeting was held on Aug. 11 at which the committee appointed by John Cahill set up a general overall large consumers committee of all interested parties to fight the PSC rate order.

The PSC release of Aug. 3 said:

Under the new rate structure there will be increases and decreases, such as the reduction of about $2,669,000 a year for approximately 230,000 customers in Westchester-Bronx area, substantial decreases at some points in the general service classification, which are offset by a 10% increase in the monthly minimum charge over the temporary rates in New York City and an increase in the end blocks of large consumers. Balancing all changes against each other, the savings to consumers over the 1948 rates will amount to approximately $21 million a year on the basis of the company's current business.

The PSC has estimated that about $7 million additional will come from large commercial users which will be offset by $2 million reduction to small commercial users.

Increase of $4.3 million . . . In a letter to stockholders, Chairman R. H. Tapscott said:

"The publicity which followed the commission's release of its decision may have conveyed the impression that they had granted no increase in electric rates. Actually the commission adjusted the electric rates in such a manner as to increase the company's annual gross electric operating revenues by an amount which it estimated at $4.3 million. Furthermore, the commission indicated in its decision that the company might reasonably increase the charges under certain special contracts for electric service to large consumers, such as the City of New York and various railroad companies, by as much as $8 million to $8.5 million annually. We believe the commission has overestimated the amount of the increase in revenues which can properly be obtained from these contracts. Nevertheless the commission's decision undoubtedly paves the way for making a very substantial increase."

New York City Contract . . . In the sale of electricity to the City of New York, Commissioner Dominick F. Paduano of the Department of Water Supply, Gas and Electricity, said that new rate schedules were offered by Con Ed which will cost the city about $2 million more a year. He declared that the proposed rates are under study and a statement would be forthcoming.

Ohio Utility Will Up Rates

Columbus & Southern Ohio Electric Co received an order from the Public Utilities Commission of Ohio authorizing increases in the company's industrial and large commercial rates as incorporated in its application to the PUC of Dec. 20, 1951. The new rate will increase gross revenues by approximately $1,680,000 and net income by $790,000 on the basis of twelve months operation ending June 30, 1952.

REGULATION

Pacific County PUD will get cheaper power from Bonneville Power Administration because of a reduction of the so-called "rachet" figure from 80% to 70%. The rachet affects Bonneville rates which are based on the peak consumption for the preceding 12 months.

Idaho Power Co's request for an overall aggregate hike in its rates of about 11% will be heard by the public service commissions in Idaho, Nevada and Oregon this month.

Rae S. Laraba has been appointed a commissioner of New Hampshire Public Service Commission, succeeding Edgar H. Hunter resigned.

Pennsylvania Power & Light Co has received Public Utility Commission approval to establish system-wide rates for 2,439 large commercial and industrial customers. It will mean a boost in revenues of $3 million annually—to the company. Most of the big consumers will pay an average of about 5%, rather than the 9% asked for by the company. About half of the $3-million hike will be paid by about 2,200 customers not now receiving preferrential rates. The other $1.5 million will be paid by the current preferential rate customers of the company.

Today in Utility Finance

YIELDS (%)

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE									
1952									
Aug. 7	**2.97**	**3.01**	**3.16**	**4.06**	**4.26**	**4.62**	**5.25**	**5.63**	**6.15**
July 31	2.96	3.00	3.13	4.08	4.26	4.62	5.34	5.73	6.23
2nd 1952	2.95	3.00	3.09	4.05	4.31	4.60	5.38	5.85	6.42
1st 1952	2.93	2.99	3.13	4.11	4.29	4.66	5.35	6.03	6.47
4th 1951	3.02	3.07	3.21	4.32	4.50	4.91	5.42	6.18	6.84
3rd 1951	2.87	2.91	3.04	4.05	4.27	4.61	5.52	6.24	7.05

Data: Reis & Chandler, Inc.

EARNINGS

Company	Period Months Ended		Net Income 1952	Net Income 1951	Earnings Per Common Share 1952	Earnings Per Common Share 1951
Arkansas-Missouri Power	12	June	$611,513	$569,354	$	$
California Electric Power	12	June	2,102,543	1,616,626	0.83(a)	0.56(a)
Central Illinois Electric & Gas	12	June	1,846,598	1,707,899	2.22	2.15
Central Illinois Public Service	12	June	5,157,559	5,099,657	....	....
Commonwealth Edison and subsidiaries	12	June	30,225,526	29,101,478	2.10	2.12
Delaware Power & Light and subsidiaries	12	June	3,291,018	3,685,727	1.63	1.92
Idaho Power	12	June	3,494,855	2,948,073	3.10	2.54
Interstate Power	12	June	2,103,642	1,808,950	0.87(a)	0.80(a)
Iowa-Illinois Gas & Electric	12	June	4,655,457	4,425,807	2.13	2.32
Kentucky Utilities	12	June	4,004,149	3,994,841	....	....
New England Electric and subsidiaries	12	June	9,552,875	9,603,388	1.28(a)	1.30(a)
Northern Indiana P S	12	June	7,977,569	7,972,199	2.22(b)	2.30(b)
Public Service Co of Colorado	12	June	6,826,864	6,958,612	2.05(c)	2.14(c)
Southern California Edison	12	June	20,234,289	18,629,991	3.03	2.82
West Penn Electric and subsidiaries	12	June	12,090,676(f)	10,756,683	3.01(e)	3.05(e)

Notes—(a) Based on average number of shares outstanding; (b) Based on shares outstanding at end of each period; (c) Based on 2,746,592 shares in 1952 and 2,706,959 shares in 1951; (e) Based on 3,960,000 shares in 1952 and 3,520,000 shares in 1951; and (f) Including special tax adjustment of $134,000 due to amortization of certain facilities under Necessity Certificates issued by the Defense Production Administration.

FINANCING

Company and Description	Amount of Offering (000)	Offering Price	Yield to Public
WEEK OF AUGUST 7-13			
Common Stock			
Mountain States Power—200,000 sh	$2,575	$12.875	6.52%
WEEK OF AUGUST 14-20			
None Scheduled			
SCHEDULED FOR SEPTEMBER TO DECEMBER			
Bonds			**Bid Date**
Arkansas Power & Light—1st mtg 1982	$15,000	.....	Sept. 9
Central Illinois Public Service—1st mtg 1982	5,000	.....	*
Appalachian Electric Power—1st mtg 1982	17,000	.....	Sept. 23
Utah Power & Light—1st mtg 1982	10,000	.....	Oct. 15
Carolina Power & Light—1st mtg 1982	20,000	.....	Oct. 20
New Orleans Public Service—1st mtg 1982	6,000	.....	Dec. 15
Notes			
Appalachian Electric Power—serial 1956-1967	$6,000	.....	Sept. 23
Preferred Stock			
Central Illinois Public Service—50,000 sh $100 par	$5,000	.....	*
Common Stock			
Utah Power & Light—167,500 sh (to be offered to stockholders on 1-for-10 basis, record about Sept. 10 to expire Sept. 25; stockholders to be allowed over-subscription privileges)	$.....	.....	.....
UNSCHEDULED AND UNDER CONSIDERATION			
Bonds			
Washington Water Power—1st mtg 1982	$30,000	.....	.....
Virginia Electric & Power—1st mtg 1982	20,000	.....	.....
California Oregon Power—1st mtg 1982	7,000	.....	.....
Mississippi Power & Light—1st mtg 1982	8,000	.....	.....
Duquesne Light—1st mtg 1982	14,000	.....	.....
Central Hudson Gas & Electric—1st mtg 1982	5,500	.....	.....
Preferred Stock			
Duquesne Light—140,000 sh $50 par	$7,000	.....	.....
Common Stock			
California Electric Power—354,610 sh	$.....	.....	.....
California Oregon Power—250,000 sh	.....	.....	.....

* Competitive bids will be opened during the week of Sept. 22.

Monthly Electric Bills Gain Slightly in 1952

Average monthly bills for residential and commercial light and power service in the U. S. on Jan. 1, 1952, showed only minor increases over the nearly all-time low levels established a year earlier and were substantially below those recorded a decade ago, the Federal Power Commission reported in its annual publication "Typical Electric Bills—Cities of 50,000 Population and More."

Averages for industrial services were somewhat higher than in 1950 and 1951, but were well below those of Jan. 1, 1949.

U. S. average residential bill for 250 kwhr per month stood at $6.79 on Jan. 1, 1952 as compared with $6.76 a year earlier, $12.86 in 1925 and $7.05 in 1940.

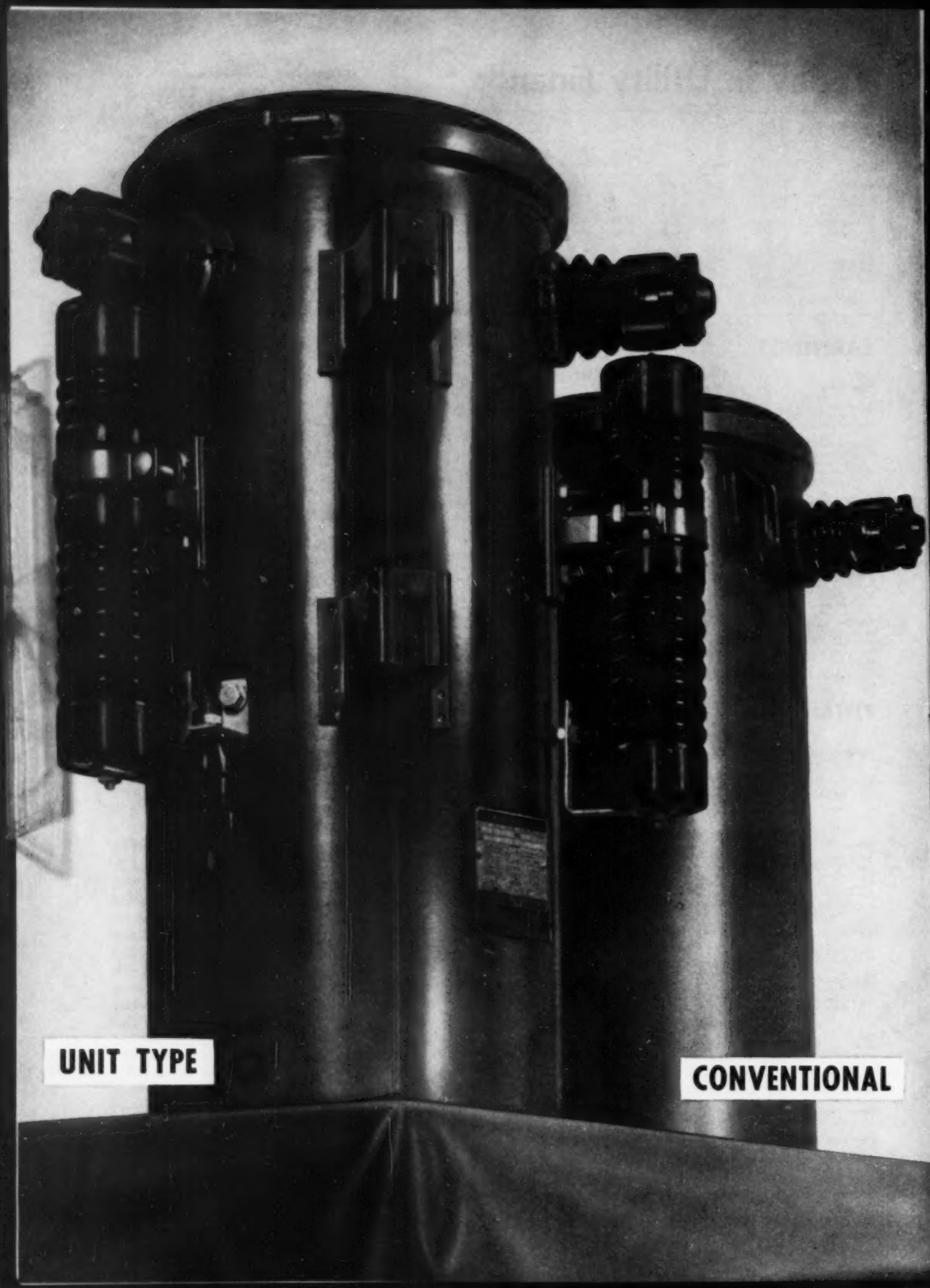
For 100-kwhr per month, the average residential bill at the beginning of this year was $3.63, a gain of 1¢ over 1951, compared with $6.03 in 1925 and $3.88 in 1940.

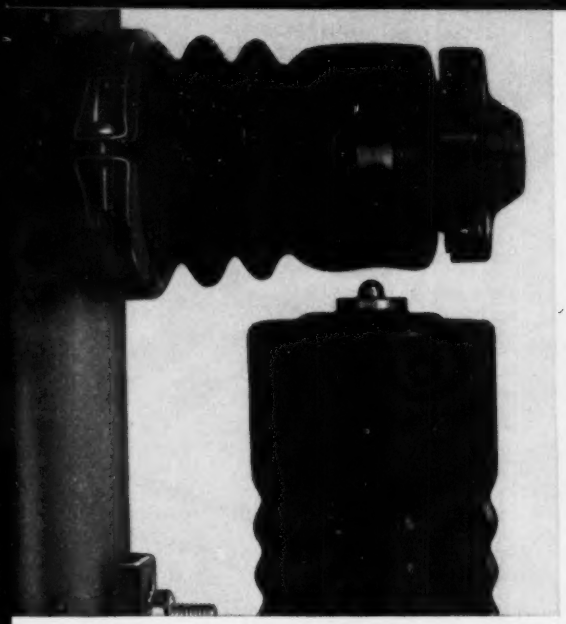
For representative commercial establishments using 750 kwhr of electricity monthly for lighting and incidental power, the average bill on Jan. 1, 1952, was $27.48, as compared with $27.35 a year earlier; $37.09 in 1935; and $31.76 in 1940. For the large shop or store using 6,000 kwhr monthly for power and incidental lighting, the U. S. average bill was $159.40 at the beginning of this year; $158.06 a year earlier; $182.23 in 1935; and $170.96 in 1940.

FINANCIAL BRIEFS

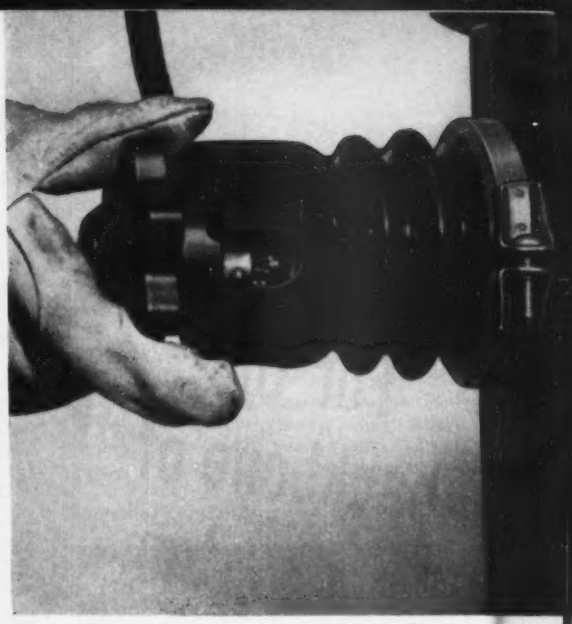
Idaho's Attorney General Robert E. Smylie has asked Securities and Exchange Commission to remove the name of Rodney C. Aller as one of the Washington Water Power Co directors because he is the son of the president of American Power & Light Co. He argued that the American holding company system should be dissolved in fact as well as in name, and that Aller would represent a link with the American management.

For a well-prepared booklet, "Financial and Statistical Review of Niagara Mohawk Power Corp as of June 30, 1952", write Earle J. Machold, president, 300 Erie Boulevard West, Syracuse 2, New York.


UNIT TYPE
CONVENTIONAL



NEW PELLET ARRESTER on General Electric unit-type transformer is isolated from the high-voltage lead by an external gap. The gap keeps the arrester at ground potential and prevents line grounding in case of arrester damage.



NEW TANK-WALL BUSHING on both conventional and unit-type G-E transformers allows safer, faster connections from either side of the bushing—without tools. A twist of the wrist is all that's needed to clamp cable securely.

Why new G-E transformers are easier to connect, better protected

General Electric Spirakore* transformers are now easier to install. Both the conventional and the unit-type have new tank-wall high-voltage bushings which eliminate exposed live parts—permit safer, faster connections without tools. Cable can be brought in from either side of the new bushings; its insulated cap cannot drop off when unscrewed.

EXTERNAL GAP PROTECTS UNIT-TYPE

The compact design of the new unit-type G-E transformer includes a breaker, a high-voltage fuse, and a new gapped Pellet arrester. The external gap isolates the Pellet arrester from the high-voltage lead. Elimination of the positive electrical connection keeps the arrester at ground potential and prevents line grounding in the case of arrester damage.

PROTECTION THAT LASTS

Because the Pellet arrester is a valve-type arrester that has unlimited interrupting capacity, you can apply G-E unit-type transformers anywhere on your system without regard to system short-circuit current. And because a valve-type arrester is not eroded by discharge, the Pellet arrester offers protection that lasts indefinitely.

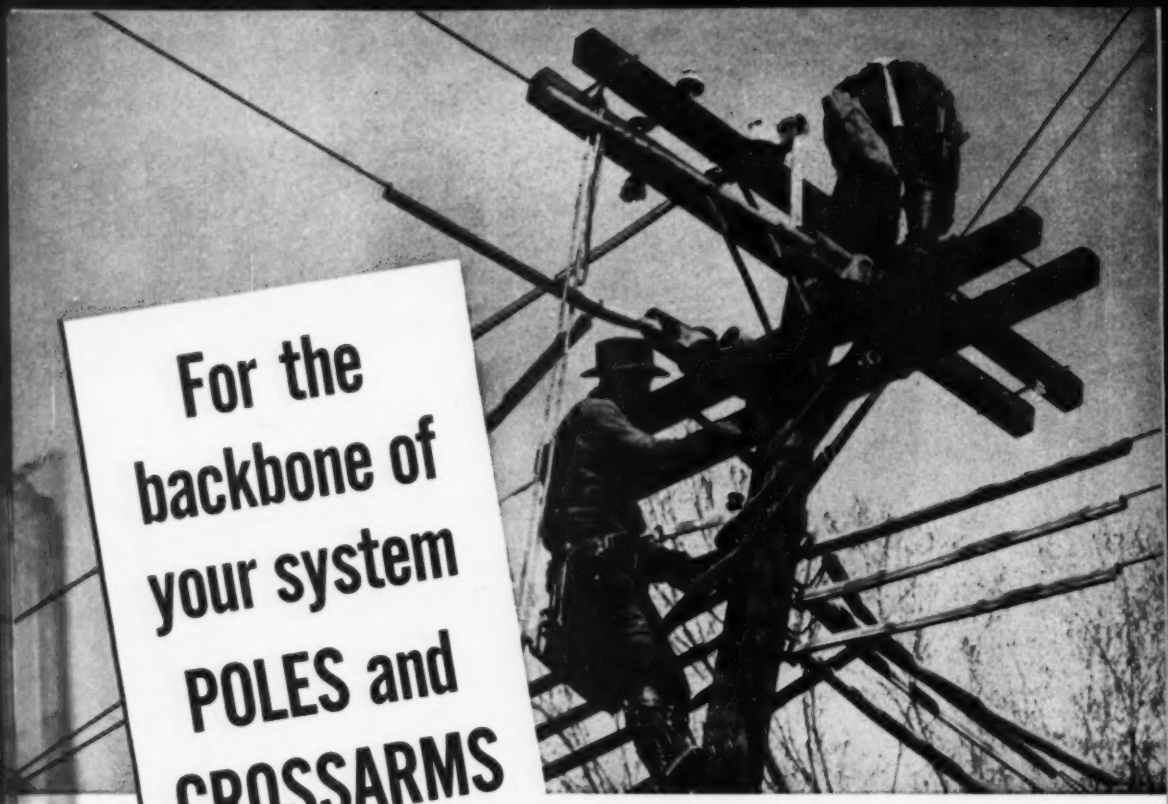
THE BEST PACKAGE YOU CAN BUY

Nitrile gaskets at every opening keep G-E Spirakore transformers moisture-proof. A one-piece cover band produces uniform gasket pressure around the entire rim, facilitating inspection and maintenance. Two baked-on paint coats provide superior resistance to weathering, water absorption, and abrasion. These features plus Spirakore design with its lower losses, greater short-circuit strength, and superior regulation, make a G-E transformer the best package you can buy.

These new G-E Spirakore transformers, both conventional and unit-type, are available in ratings 5 kv and below, 100 kva and below. For more information see your nearest Apparatus sales office, or write to Section 402-128, General Electric Co., Schenectady 5, N. Y.

**Reg. Trademark of General Electric Company*

GENERAL ELECTRIC



For the backbone of your system POLES and CROSSARMS

Via GraybaR

The pole-line backbone that supports today's essential power lines needs seasoned strength and durability to do its job efficiently and at low maintenance cost.

That's one reason why power companies all over the nation choose Graybar for all their pole-line needs. They know that Graybar-distributed materials are always right for the job and stand up under abnormal stress of storms, ice, and snow.

POLES – Differing conditions lead to different local preferences. That's why Graybar distributes *all* types of poles – full-length, pressure-treated Southern Pine . . . full-length, pressure-treated Fir and Cedar . . . butt-treated Northern and Western Cedar.

All treated poles are carefully selected and processed to provide maximum strength and durability – plus the clean, smooth exterior surface required for city use.

CROSSARMS – Douglas fir crossarms via Graybar are selected and seasoned under rigid methods – are strong, long-lasting, and provide a wide margin of safety in the line.

POLE-LINE SUPPLIES – Graybar also distributes insulators, wire, cable, strand, hardware, tools, and hundreds of other needed pole-line supplies – all products of outstanding manufacturers.

To keep the backbone of your system strong, order your supplies from Graybar. You'll always get dependable items, and the nationwide Graybar warehouse system helps assure the *fastest possible* deliveries under today's uncertain conditions.

Because Graybar is wholly owned by its operating and retired personnel, you can always expect an extra measure of personal interest in serving you. Feel free to call your local Graybar Representative for information on any electrical item . . . call your nearby Graybar Outside Construction Specialist for planning aid and technical advice.

Graybar Electric Company, Inc. Executive Offices: Graybar Building, New York 17, N. Y.

128-58

Everything for your pole lines
Via GraybaR

IN OVER 100 PRINCIPAL CITIES

Zinc's Price Gymnastics . . .

. . . confuse the industry. Price jacked up ½¢ a lb to 14¢. Private tin purchases permitted. Copper buying is active

The latest developments in the nonferrous metal market indicate that the forces of supply and demand again are taking control of the economic reins in our free enterprise system.

The price of zinc last week was increased ½¢ a lb to 14¢ a lb shortly after the price had been cut 1½¢ to 13½¢.

More Business at 13½¢ . . . Although this action left the industry somewhat confused, a spokesman for the smelter which made the boost said the company was doing more business at 13½¢ than there was metal available on a daily production basis.

Spokesman for another firm said the ½¢ rise might be due to an increase in orders. He said, however, he wouldn't be surprised to see the price of the metal go up to 15¢ within a short time.

The situation was made more confused when another zincman said the price change doesn't make sense. He added the cut to 13½¢ did not bring in a noticeably larger amount of business. He revealed that sales were still light.

The recent zinc price cut of 1½¢ to a new post-Korean low of 13½¢ a lb was a delayed effect of the 55-day steel strike.

During the strike the steel industry, a major user of zinc for galvanizing, bought little of the zinc output, which piled up as a result. Then zinc stocks held by producers continued to mount, while output remained at the same high level.

The 13½¢ price was the lowest since June, 1950. The price remained at 19½¢ from last October until June 2. That date the price was cut 2¢ a lb in the first of a series of reductions thus reflecting an increasingly heavy supply situation.

Private tin buying again is permitted after a 16-month ban. However, the Reconstruction Finance Corporation will continue buying foreign tin under existing contracts, but no longer will the government agency be the sole importer of this nonferrous metal in the United States.

Must Report to NPA . . . According to Henry H. Fowler, head of the National Production Authority, private business men now may resume importing tin—as much of it as they want and at any price—provided they report to NPA on what they receive and hold in inventory.

The agency also loosened controls on domestic tin use. Consumers now may buy tin from a supplier of their own choice. They still may not use more than the amount allocated to them by NPA. But, they can receive allocations for three-month periods instead of the previous month-by-month basis.

Tin Market Improves . . . The removal of the ban was taken as the result of an improved tin situation. "Our reserves are no longer dangerously low," Jess Larson, General Services administrator, revealed recently.

RFC, which took over U. S. tin

Bulb Bank Creates Artificial Loads

This bank of light bulbs and heaters generates enough heat to warm four five-room homes during 20-below weather. It is used at Minneapolis-Honeywell Regulator Co's plant to create artificial electric loads to test the company's latest control devices. Ranging in size from 100 to 1,000w, the bulbs fill more than 800 sockets.

purchases in March, 1951, will continue selling the metal to United States industry at the base price of $1.21½ a lb.

Contract negotiations are now underway between the United States and Bolivia on a contract for this country to purchase Bolivian tin.

Bolivian Ambassador Victor Andrade is head of the Bolivian group conferring with RFC officials. Andrade hopes to obtain a one-year contract for purchase of Bolivian tin concentrates by the U. S. and to obtain more than the prevailing New York rate of $1.21½ a lb.

With the aluminum industry, the Office of Price Stabilization has authorized price increases totaling $50 million a year for producers of primary aluminum.

The OPS regulation calls for an increase of 1¢ a lb for producers of primary aluminum, alloys and ingots and 5% for producers of other primary aluminum mill products.

The boost applies to the Aluminum Co of America, Kaiser Aluminum & Chemical Corp, and Reynolds Metals Co and other primary fabricators.

Industry Dissatisfied . . . The increase, only half of what was requested by the three companies, was granted because of higher freight, materials, and labor costs. The price increase, first given the aluminum industry since the end of 1950, was designed to restore pre-Korean dollars-and-cents profits. Nevertheless, the industry is dissatisfied with the boost and may appeal it.

Lead Stockpile . . . Lead demand seems to be satisfactory. Trade sources, however, admit it has been helped by recent government purchases of lead for its civilian stockpile. It is believed that almost 20,000 tons of the authorized 30,000 already have been acquired by the government for its stockpile.

Industry members expect some improvement in demand during August, particularly from the storage battery industry. This industry is approaching the time of the year when replacement battery shipments reach a peak.

A stable factor in the metal picture is copper. Copper buying remains active and the domestic market for the metal is firm. The price of copper is unchanged at 24½ ¢ a lb, Connecticut Valley, and 36½ ¢ for Chilean copper.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Ala., Bessemer—Johnston Broadcasting Co., Box 147, Bessemer, television station, $234,470. Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engrs.

Ala., Birmingham—Appleton Electric Co., 1701 Wellington St., Chicago, Ill., electric equip. plant, $450,000. J. E. Sirrine & Co., 215 W. Main St., Greenville, S. C., engrs.

Calif., Stockton—Pacific Gas & Electric Co., Market St., San Francisco, sub-station near Stockton Field, $500,000.

Ill., Chicago—Johnson-Kennedy Radio Corp., 400 N. Michigan Ave., television station, $502,200. E. C. Page Consulting Radio Engineers, Pond Bldg., Wash., D. C., consult. engrs.

Iowa—Northwest Iowa Power Cooperative, Cherokee, 621 mi. 69 kv transmission line, 22 substations and other related facilities, Cherokee Co., $7,551,000.

In., Sanborn—City Power plant imprvs. being equipment and new power plant bldg. $40,000.

Kan., Wichita—Sunflower Television Co., 300 S. Topeka Ave., television station, $658,500. Guy C. Hutcheson, Arlington, Tex., consult. engr.

Me., Bangor—Community Telecasting Service, 57 State St., television station, $122,000. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr.

Md., Hagerstown — Hagerstown Broadcasting Co., c/o G. C. Crilley, 33 W. Franklin St., television station, $215,720. Kear & Kennedy, 1302 18 St. N. W., Wash., D. C., consult. engrs.

Mass., North Adams — Greylock Broadcasting Co., 8 Bank Row, Pittsfield, television station, $163,000. James C. McNary, National Press Bldg., Wash., D. C., consult. engr.

Mich., Benton Harbor — Palladium Publishing Co., 59-61 Wall St., television station, $301,200. Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engrs.

Minn., Duluth — Lakehead Telecasters, Inc., 700 Torrey Bldg., Zone 2, television station, $354,500. Weldon & Carr, 1605 Conn. Ave. N. W., Wash., D. C., consult. engrs.

Missouri—Cuivre River Electric Cooperative, Troy, 245 mi. rural distr. lines and sys. imprvs., Lincoln Co. $200,000.

Mont., Missoula—Mosby's, Inc., 127 E. Main St., television station, $117,800. Warren M. Mallory, Laramie, Wyo., consult. engr.

N. J., Fort Monmouth—U. S. Eng., 80 Lafayette St., New York 13, N. Y., electric rehabilitation, $100,000-$500,000. A. C. Wood Assocs., Inc. Stock Exchange Bldg., Phila., Pa., consult. engr.

N. C., Wilmington—Carolina Power & Light Co., Insurance Bldg., Raleigh, electric generator plant on east bank of Cape Fear River, $17,500,000.

O., Toledo—The Toledo Blade Co., 532-541 Superior St., television station, $400,440. E. C. Page Consult. Engineers, Bond Bldg., Wash., D. C., consult. engrs.

S. C., Columbia—Marsoco Broadcasting Corp., c/o C. W. Martin, 1127 Lady St., Columbia, television station, $481,880. Millard M. Garrison, 1519 Conn. Ave. N. W., Wash., D. C., consult. engr.

Tenn., Memphis—Mid-South Refrigerated Warehouse Co., c/o A. Epstein & Sons, Inc., engr.-archt., 2611 W. Pershing Rd., Chicago, Ill. 115,000 sq. ft. cold storage-warehouse, $1,250,000. E. L. Harrison, Madison Bldg., Memphis, archt.

Tex., Fort Sam Houston—U. S. Gov., c/o Contg. & Purch. Officer, Bldg. 370, Fort Sam Houston, San Antonio, Tex., rejected bids June 27, electric sub-station, Inv. No. F-41-133-52-159, T.R. $136,665. Formerly reported 7/21/52, E. W., p. 48, under Low Bidders.

Tex., Texas City—Town, Texas City, expansion street traffic lighting sys. $75,000; exten. street lighting sys. $75,000.

Va., Roanoke—American Viscose Co., 1714 9th St. S. E., power house.

Wisconsin—Rock County Electric Cooperative Assoc., Janesville, 50 mi. rural distr. lines and sys. imprvs., Rock Co. $242,000.

Low Bidders & Contracts Awarded

Georgia—Sawnee Electric Membership Corp., Cumming, Ga., Owner Builds, $299,000, 75 mi. rural distr. lines and sys. imprvs. in Forsythe Co.

Md., Fort Richie—John McShain, Inc., 1501 N. Arlington Ridge Rd., Arlington, Va., LH, $284,400, MICROWAVE RELAY BLDG., Eng 40-0808-52-101 (76) in vicinity, U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C. Bids July 10.

Mich., Grayling — City, Municipal Light Comn., Grayling, Mich. Owner Builds, structure, 1 story, 22x40 ft. brick, concrete LIGHT PLANT addn.;

Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee, Wis. CA, generating diesel plant. Approx. $130,000.

North Carolina—R. H. Bouligny, Inc., 433 W. Morehead St., Charlotte, N. C. LB $80,577, rural distr. lines, Alexander and Iredell Counties. Davie Electric Membership Corp., Mocksville, N. C. Bids July 15.

Tenn., Tullahoma — M. T. Reed Constr. Co., 162 Millsaps Ave., Jackson, Miss. LB $776,590, 123x277 ft. model installation bldg. for the propulsion wind tunnel at Arnold Engineering Development Center, incl. 2 story shop sect., U. S. Eng., Tullahoma, Tenn.

Washington—Public Utility District of Ferry Co., Republic, Wash., Day Labor, $215,000, 69 mi. power line to serve Aeneas Valley, Okanogan Co.

Wash., Tacoma—Love Electric Co., 1914 Market St., Tacoma, Wash., Day Labor, $115,000, Warehouse.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Ark., Mena—Inland Mining Co., c/o Southwestern Eng. Co., 4800 S. Santa Fe St., Vernon, Calif., manganese plant. Approx. $1,000,000.

Calif., Berkeley—University of California, Administration Bldg., plans by Eric Mendelsohn & Michael A. Gallis, 627 Commercial St., San Francisco, Chemistry laboratory bldg. on campus, $1,200,000.

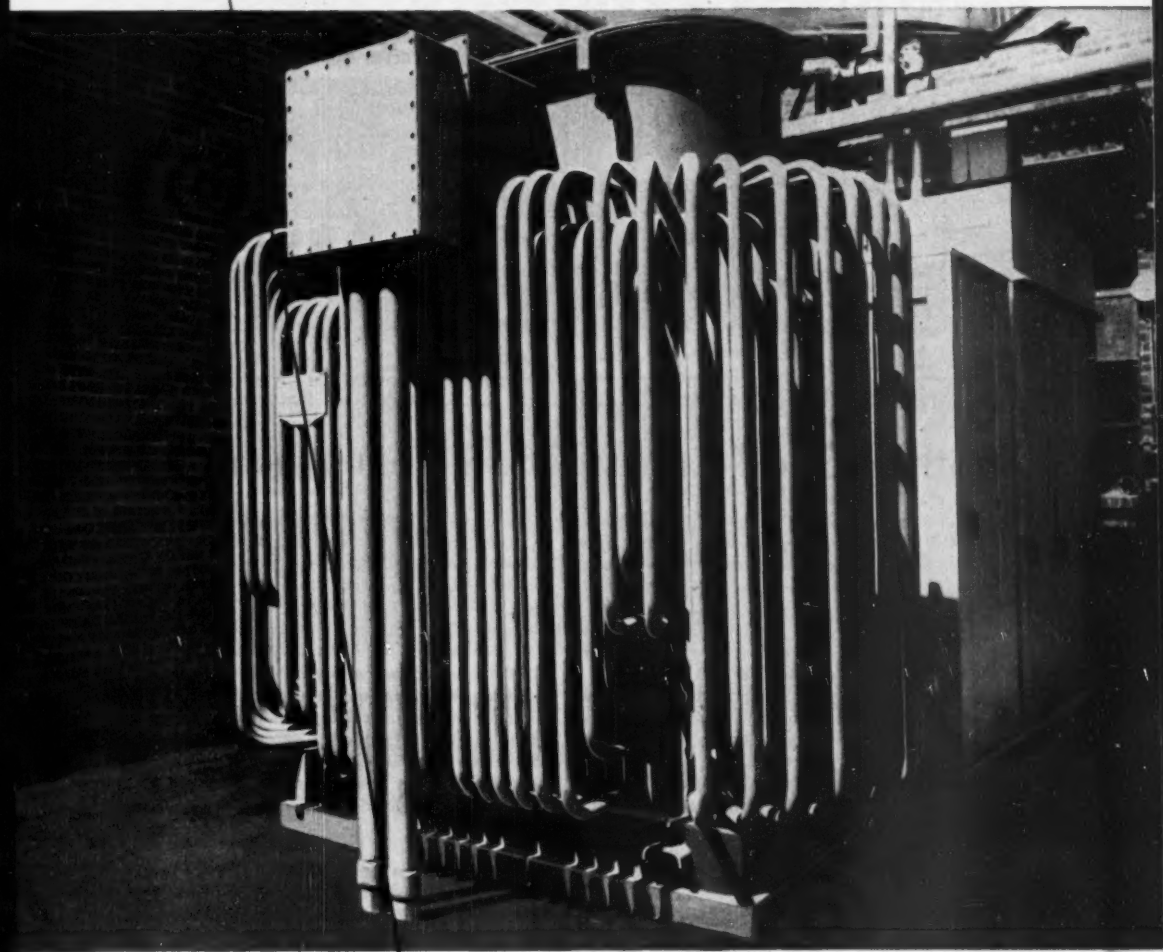
Ky., Fort Knox—U. S. Eng., 830 W. Broadway, Louisville, armored school bldg., 2 ordinance and tank repair shops, 12 tank battalion maintenance shops, 2 new tank firing ranges, new electric facilities, 6 deep water wells, $1,410,000.

Mich., Edmore—Carboloy Co., Inc., K. R. Beardslee, pres. 11177 E. 8 Mile Rd., Detroit, brick, steel, concrete factory, $3,000,000. Smith, Hinchman & Grylls, 800 Marquette Bldg., Detroit, archts.

Mo., Manchester—Glyn Cagny Community, c/o C. B. Todd, Inc., 11½ West Big Bend, St. Louis, Zone 22, shopping and business center, 300 to 500 residences, community house, motion picture theatre, large restaurant, swimming pool and bathhouse, 5-acre children's park and chapel. Manchester Rd. vicinity of Carmen Rd. Approx. $5,000,000.

Tex., San Antonio—Dpt. Air Force, The Pentagon, Wash. 25, D. C., admin. bldgs. to serve Brooks Aviation Medical School, $8,000,000.

MORE POWER FOR CALIFORNIA INDUSTRY



Many industries economize by installing transformers like this Kuhlman 2000 KVA 3 phase, Saf-T-Kuhl transformer, rated at 24 KV, located at Fibreboard Products Inc., Antioch, California.

Because Saf-T-Kuhls contain a cooling fluid which is 100% safe from the danger of fire or explosion, this firm was saved the expense of building a fireproof vault. And, because the fluid does not sludge, it does not have to be filtered or reconditioned — an additional saving.

Saf-T-Kuhls, like all Kuhlman transformers, are expertly engineered and solidly built. Kuhlman has been building transformers that way since 1894.

Why not specify Kuhlman for your next installation? Write for complete details. For more information about Saf-T-Kuhls ask for bulletin CS-501.

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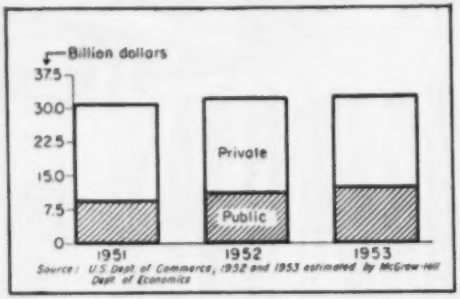
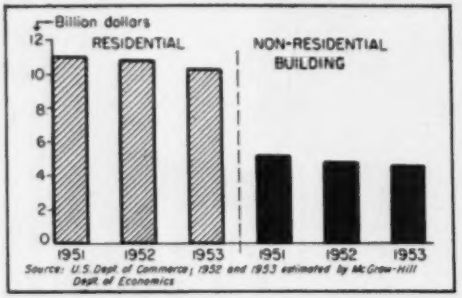
ELECTRICAL BUSINESS OUTLOOK

Construction Total Grows . . . But Key Private Building Declines



Source: U.S. Dept. of Commerce; 1952 and 1953 estimated by McGraw-Hill Dept. of Economics



Source: U.S. Dept. of Commerce; 1952 and 1953 estimated by McGraw-Hill Dept. of Economics

Another Good Construction Year Ahead

The construction boom is still rolling. Total construction in 1952 will hit the highest level ever—1953 may be even better. Dollar volume is expected to pass $32 billion. Furthermore, construction volume seems sure to stay very high for at least several years into the future.

Not all types of building are rising. Private construction will be less this year than last and will drop again in 1953. The present boom is powered by public work connected with the defense effort. But practically all kinds of building are still at very high levels.

Housing Stays High Despite Decline . . . Homebuilding is a good example of a type of work that's declining but is still doing so well that the decline doesn't matter too much. Dollar volume of homebuilding is likely to slip just a bit this year and again in 1953. But builders will start more than one million nonfarm houses in 1952 despite the decline.

It looks more and more as if there'll be another million starts in 1953. It's still too early to make a good estimate, but all indications are favorable. That would make five million-start years in a row. Before 1949, the industry never had built a million houses in one year.

Private nonresidential building also is dropping. Dollar volume in the first seven months of 1952 was about 4% under the level for 1951. This decline will continue. Industrial building, which makes up half of all private nonresidential work today, will fall slowly as more defense-stimulated industrial expansion programs are completed.

But the overall drop won't be severe. A lot of the loss in industrial building will be made up by increased work on commercial buildings. Needs for commercial structures, especially office buildings and regional shopping centers, are tremendous. Very few office buildings have been put up since the war. They are badly needed to serve the new suburban communities built in the past few years.

Commercial building won't hit its full potential next year; it's still being held back as a result of controls and taxes connected with the defense program. Controls on materials are being eased now. But the steel strike will keep structures short longer than expected. And financial controls—Regulation "X"—still make financing a tough problem.

All the federal pressures now holding commercial building down are likely to be eased next year. Regulation "X" may die entirely, and there is a good chance that the excess profits tax will be allowed to die, too. Commercial work should rise from about $1 billion this year to $1.2-$1.4 billion in 1953. If general business stays good thereafter, commercial work could easily hit close to $2 billion a year in 1954-55.

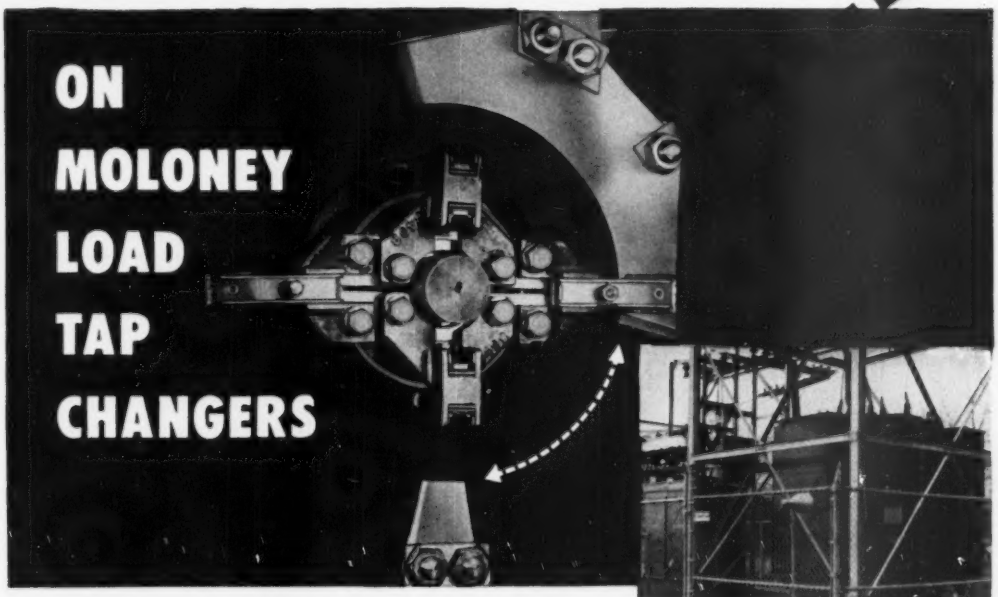
Utility Construction to Stay Steady . . . Other nonresidential building will be about $1.5 billion in both 1952 and 1953. With utilities and farmers expected to keep their construction roughly steady at $5.3-$5.5 billion in both years, total private construction may be about $21.1 billion this year and more than $20 billion (in 1952 prices) in 1953. With costs rising, actual dollar volume may actually be larger next year than this.

Public construction is rising fast, accounting for the big jump in total construction spending. Public authorities spent $9.3 billion for construction in 1951; this year the total should pass $11 billion, and it ought to go higher than $12 billion in 1953.

Military projects provide most of this increase. Work on military and naval facilities and public industrial plants (mostly atomic energy) was about $2 billion in 1951, should reach $3.6 billion this year, and go up a little next year.

Other public work also is rising or due to rise. The public housing program is getting up steam. The need for highways, schools, and sewers is finally getting recognition and more important, money.

GREATER ARC CLEARANCE...



Provided on . . . Moloney Feeder Voltage Regulators • Regulating Transformers • Load Ratio Control Transformers

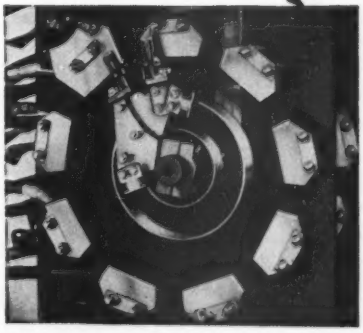
Load Tap Changers, provided on all Moloney Feeder Voltage Regulators, Regulating Transformers and Load Ratio Control Transformers, feature a Load Transfer Switch which relieves the Tap Selector Switch of all arcing duties and results in greatly increased arc interrupting capacity.

Use of the separate Load Transfer Switch permits longer arc clearances to be maintained since arcing duty is confined to but two stationary contacts per phase. This is in contrast to the nine stationary contacts per phase which are subject to arcing on regulators which require the Tap Selector Switch to break the load current.

This feature of the Moloney Load Tap Changer, along with the use of by-pass switching reactors, permits tap changing on a larger Kva load without increasing the physical size of the Load Tap Changing equipment. Maintenance costs are also reduced since arcing is eliminated from the Tap Selector Switch.

MEP1-14

NO ARCING HERE...



No arcing duty is imposed upon any of the tap selector switch contacts, avoiding the necessity for replacement due to burning or scoring. Contacts are of hardened *copper alloy* to minimize frictional wear.

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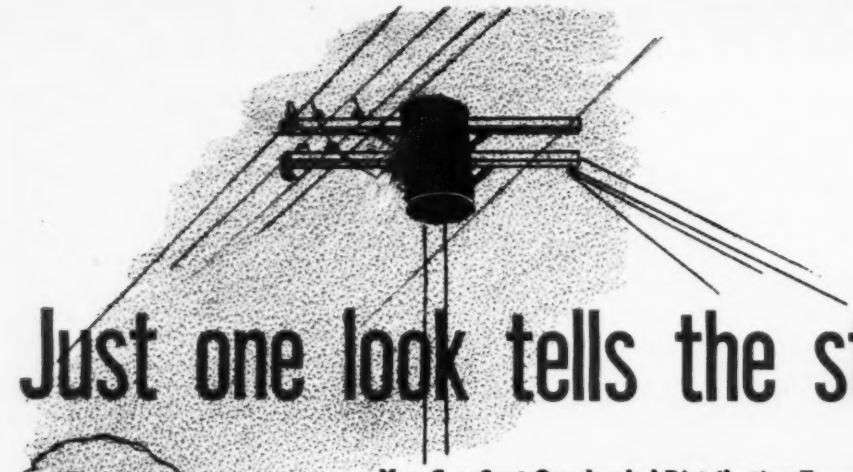

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You Can Spot Overloaded Distribution Transformers At a Glance Right From Your Service Truck

TODAY'S BIGGEST DOLLAR in overload detectors is the one you invest in *Thermalite* overload indicator, introduced by Allis-Chalmers. Big in value because it's economical to own and use, *Thermalite* indicator will make savings in transformer utilization and protection that return its original cost many times.

This new Allis-Chalmers device visibly tells you when your transformers are overloaded. Thus you reduce burnouts and service interruptions and eliminate extensive and expensive load surveys. Since you can single out units that should be replaced by higher rated transformers, you can schedule transformer servicing during daylight hours. You do not have to worry about power interruptions since the *Thermalite* overload indicator operates purely as a signal.

The brilliant warning light snaps on during overloaded conditions and remains on until turned off by convenient external manual control. It's simple to operate, low in original cost with no maintenance costs involved. Detects overloads at a glance.

Dollar for dollar this simple, reliable transformer overload indicator is a tremendous value — worth checking into. Learn more about the *Thermalite* overload detector by contacting your Allis-Chalmers sales office today. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

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